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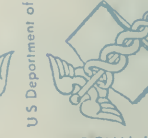
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# FENNER'S WORKING FORMULÆ

A HAND-BOOK OF THE OLD AND THE  
NEW PHARMACOPŒIAS,

CONTAINING

*WEIGHT AND MEASURE STANDARDS, WORKING  
PROCESSES, WORKING FORMULÆ, THE ME-  
DICINAL PROPERTIES AND DOSES OF  
DRUGS AND THEIR PREPARATIONS*

AND BEING

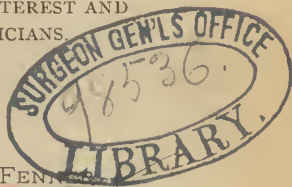
I. COMPARISON OF THE 1870 WITH THE 1880 PHARMACOPŒIA

WITH REMARKS, SUGGESTIONS, ORIGINAL PROCESSES AND  
FORMULÆ, AND OTHER MATTER OF INTEREST AND  
VALUE TO DRUGGISTS AND PHYSICIANS.

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COMPILED AND WRITTEN BY B. FENNER

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WESTFIELD, N. Y.

B. FENNER, PUBLISHER AND PROPRIETOR.

1884.

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1884

Film No. 5735 no. 6

"The discovery and publication of a new truth, great or small, is the best means whereby to aid in advancing the calling in which we may be engaged, benefit our fellow-creatures and ourselves, and unveil the laws of the Creator of all things."—  
*Prof. Attfield.*

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# PREFACE.

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Druggists who would make, and physicians who would prescribe the officinal preparations intelligently, find it necessary to compare the formulæ of the new, with those of the old authority. So many changes have been made in the composition, proportions, and manner of making preparations in the new Pharmacopœia, that unless the formulæ of the new and the old standards are compared with each other, their differences cannot be well understood, and much confusion and misunderstanding must result.

The evolution from the old to the new order of things must, necessarily, be very gradual, but it is none the less certain, for, as new text-books are issued, they will confirm to the new authority; yet it will be, perhaps, ten years before it can be said that the old Pharmacopœia has gone out of use and the new one has entirely taken its place; and during all this time constant comparison of the two will be necessary.

Many physicians and druggists will, no doubt, adopt the new authority, while others will prefer to stick to the old and tried standard with which they are already familiar, but, in either case, in order to judge them fairly the formulæ must be compared, as stated.

The object of this volume is to thus compare the former with the present officinal formulæ in such definite, similar weight and measure and relative quantities that their differences may be seen at a glance; also to make such explanations, suggestions, and remarks on the preparations, and to introduce such other methods, formulæ, etc., as a life-long experience

in the business has shown to be of value and interest to druggists in the practice of their profession.

The original processes and formulæ that are introduced in these pages,— notably those of water-bath percolation — have not been formulated and recommended, without thorough and repeated trials and proofs of their efficiency; and it is asserted — with all due respect to the authority of the Pharmacopœia, — that, if properly followed they will give better results and produce better preparations than corresponding officinal process and formulæ.

The practice of Pharmacy in this country is gradually emerging from the position of a trade to the dignity of a profession, and it must be borne in mind that the bettering of its position is due, mainly, to the superior pharmaceutical education and training of the druggists and pharmacists of the present as compared with those of former time. Whatever, therefore, adds to the stock of pharmaceutical knowledge, or assists pharmacists to a better understanding and use of such knowledge, cannot but be of permanent value to the profession. It is with this aim in view that this volume is issued; and if, as is earnestly hoped, it may lighten the labor, or contribute to the knowledge, pleasure or profit of the ever-busy druggists of the land, the writer will feel that his labor has not been in vain.

B. F.

WESTFIELD, N. Y., Aug., 1884.

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## PART I.

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# OUR WEIGHTS AND MEASURES.

---

The confusion that exists in our weights and measures, as applied to the business of the pharmacist, somewhat resembles the confusion of tongues at the building of the Tower of Babel.

We buy and sell by avoirdupois weight and wine measure—the commercial weight and measure of the United States. They are used and understood by all business men in all business transactions requiring their use, and are familiar to all the people of this country.

The poor druggist, however, in making his preparations is confronted at the outset by a confused and complex array of weights and measures, which to convert into shape for his use and convenience requires considerable mathematical calculation and more than average intelligence.

It is well in a business point of view that the profits on drugs are large, for few druggists take into consideration that in buying by avoirdupois weight of  $437\frac{1}{2}$  grains in an ounce and dispensing or selling by apothecary or troy weight of 60 grains in a drachm, or 480 grains in an ounce, there is a loss of about 10 per cent. Although this may seem trifling, yet in the aggregate it is a large item, and should be well considered and understood.

Another matter which cannot be well overlooked is the difference in the weight and measure of acids, syrups, glycerin, chloroform, etc., which are usually bought by weight and sold or dispensed by measure, the difference between their weight and measure ranging from 20 to 45 per cent. On essential oils, spirits of nitre, and other ethers there is however a trifling gain, as they weigh less than they measure.

But outside of the consideration of the subject in a business point of view, is the great inconvenience of so many

*different kinds* of weights and measures. Few druggists throughout the country are provided with troy weights of larger denomination than an ounce, and but a very small number are provided with metric weights and measures; therefore, if any considerable quantity of a preparation is desired to be made, these weights must be converted into avoirdupois weight or apothecary measure.

It is, however, more frequently the case, especially with country druggists and those who have not had special pharmaceutical training, that when troy weight in ounces is directed avoirdupois weight in ounces is used. This assertion is not made without a thorough knowledge of the drug trade *as it is* throughout the country, and when everything is considered it may not be thought so much a fault of the druggists as of having a system of weights directed in text-books which are not used in business transactions. This, of course, does not refer to the new Pharmacopœia, in which troy weight is omitted altogether, but to the former Pharmacopœias, the Dispensatories, and text-books generally used.

The new Pharmacopœia has attempted to remedy the difficulty by introducing the metric system of weights and measures, and by substituting parts by weight, instead of definite weight and fluid measure. Instead of being a benefit as was designed, it proves but another stumbling block in the way of the average druggist. It adds to the confusion by introducing a new system of weights and measures with which the greater share of druggists in this country are unacquainted; and by the innovation of parts by weight, which is at least inconvenient and unfamiliar to most American druggists. As a proof of the inconvenience of parts by weight for making *definite quantities* by measure, of any liquid preparation, let the druggist try to make a pint or a quart (the amount usually required to fill his shelf bottles) of any preparation, in parts by weight as directed by the new Pharmacopœia. He will find that it involves a tedious, if not a complex, mathematical calculation.

Let us for a moment review and compare our weights and measures as they now are.

## OUR WEIGHTS AND MEASURES COMPARED.

---

The United States Pharmacopœia previous to the 1880 revision and all standard American text-books directed troy weight. The present revision of the United States Pharmacopœia directs metric weight and measure whenever definite weight and measure is mentioned. The British Pharmacopœia and text-books direct avoirdupois weight. All of the Pharmacopœias of continental Europe direct parts by weight, or metric weight and measure.

The **Grain** is the equivalent unit of the apothecary, troy and avoirdupois systems of weight. Apothecary and troy weight correspond, the terms of the former only being used by druggists.

The **Scruple** equals 20 grains. It is now seldom used, being expressed in grains instead.

The **Drachm** equals 60 grains or  $\frac{1}{8}$  apothecary or troy ounce.

The **Ounce** of apothecary or troy weight equals 480 grains or  $\frac{1}{12}$  of the apothecary or troy pound of 5,760 grains.

The **Ounce** avoirdupois weight (American commercial and British pharmaceutical standard) equals  $437\frac{1}{2}$  grains or  $\frac{1}{16}$  of the avoirdupois pound of 7,000 grains.

The **Pound** of apothecary or troy weight equals 5,760 grains or 12 apothecary or troy ounces of 480 grains.

The **Pound** avoirdupois weight (American commercial and British pharmaceutical standard) equals 7,000 grains or 16 avoirdupois ounces of  $437\frac{1}{2}$  grains.

The **Gramme** is the unit of metric weight. A gramme equals 10 decigrammes or 100 centigrammes or 1,000 milligrammes or 15.43 grains.

A **Cubic Centimetre** of water at 4° C. (39° F.) weighs a gramme; therefore the gramme and cubic centimetre are equivalent.

The **Litre** is the unit of metric fluid measure and equals 1,000 cubic centimetres.

The **Minim** is a variable expression of fluid measure—

the 480th part of a fluid ounce. The minim of American fluid measure of water at its greatest density weighs about 0.95 grain, being the 480th part of the American fluid ounce of 455.7 grains of water. The British minim being the 480th part of the British fluid ounce of  $437\frac{1}{2}$  grains of water—weighs about 0.91 grain.

The **Fluid Drachm** equals 60 minims or  $\frac{1}{8}$  fluid ounce.

The **American Fluid Drachm** of water weighs 56.96 grains, being  $\frac{1}{8}$  of the American fluid ounce of 455.7 grains of water.

The **British Fluid Drachm** of water weighs 54.68 grains, being  $\frac{1}{8}$  of the British fluid ounce of  $437\frac{1}{2}$  grains of water.

The **Fluid Ounce** equals 480 minims or 8 fluid drachms.

The **American Fluid Ounce** of water weighs 455.7 grains, and is 1-16 of the American pint of 7,291.1 grains of water.

The **British Fluid Ounce** of water weighs  $437\frac{1}{2}$  grains, and therefore corresponds with their weight standard (avoirdupois) ounce. It is 1-20 of the British *Imperial* pint.

The **Pint** of American fluid measure (28.875 cubic inches) equals 7,680 American minims; 7291.1 grains of water or 16 fluid ounces of 455.7 grains of water, at 60° F.

The **Imperial Pint** of British fluid measure (34.659 cubic inches) equals 9,600 British minims; 8,750 grains ( $1\frac{1}{4}$  pounds avoirdupois) of water or 20 British fluid ounces of  $437\frac{1}{2}$  grains of water at 60° F.

The **Gallon** of American fluid measure (231 cubic inches) equals 61,440 American minims; 58,328.9 grains of water or 8 American pints.

The **Imperial Gallon** of British fluid measure (277.274 cubic inches) equals 76,800 British minims; 70,000 grains (10 pounds avoirdupois) of water or 8 *Imperial* pints.

The relation of weight to fluid measure as above stated is calculated for distilled water at 15.6° C. (60° F.). The volume of water increases or decreases in a ratio varying with the temperature. At 15.6° C. (60° F.) its volume is 1.000938, as compared with 1.000000, its volume at its greatest density 4° C. (39° F.).



The following tables show the relation of the various weights and measures, used in our text-books, to each other. In converting the weight of liquids, *other than water*, into fluid measure or *vice versa*, the following rules may be followed:

To find the volume or fluid measure of any liquid; the weight and specific gravity being given.

RULE.—*Divide the given weight by the specific gravity and multiply the quotient by the equivalent of the weight unit, as shown in the column of the required fluid measure.*

FORMULA:  $\text{Volume} = \text{weight} \div \text{specific gravity} \times \text{fluid measure equivalent of weight unit.}$

EXAMPLE: What is the volume or fluid measure of 16 avoirdupois ounces of diluted alcohol, specific gravity 0.928, in American fluid ounces?

$$16 \div 0.928 \times 0.960 = 16.58 \text{ American fluid ounces.}$$

To find the weight of any liquid; the volume or fluid measure and specific gravity being given.

RULE.—*Multiply the given volume by the specific gravity, and that product by the equivalent of the measure unit, as shown in the column of the required weight.*

FORMULA:  $\text{Weight} = \text{volume} \times \text{specific gravity} \times \text{weight equivalent of measure unit.}$

EXAMPLE: What is the weight of 16 American fluid ounces of simple syrup, specific gravity 1.310, in grammes?

$$16 \times 1.310 \times 29.528 = 618.90 \text{ grammes.}$$

To convert any given weight or measure into its equivalent in any other weight or measure.

RULE.—*Multiply the given weight or measure by the unit equivalent of the required weight or measure, as shown in the column of the weight or measure into which it is to be converted.*

FORMULA:  $\text{Weight or measure required} = \text{given weight or measure} \times \text{unit equivalent of required weight or measure.}$

EXAMPLE: Convert 25 grammes into avoirdupois ounces.

$$25 \times 0.035 = 0.875 \text{ avoirdupois ounces.}$$

## WEIGHT EQUIVALENTS.

UNITS OF WEIGHT AND MEASURE.	WEIGHT EQUIVALENTS.			
	In Troy Grains.	In Apothecary Weight.	In Avoirdupois ounces. (437½ grs.)	In Metric Grammes.
<b>APOTHECARY WEIGHT.</b>				
1 Grain (gr.) . . . . .	1.	One grain.	0.0023	0.0648
1 Scruple (ʒ) . . . . .	20.	One scruple.	0.0457	1.2959
1 Drachm (ʒ) . . . . .	60.	One drachm.	0.1371	3.8879
1 Ounce (ʒ) . . . . .	480.	One ounce.	1.0971	31.1035
1 Pound (lb.) . . . . .	5760.	One lb.=12ʒ In Troy oz. (480 grs.)	13.1657	373.2420
<b>AVOIRDUPOIS WEIGHT.</b>				
1 Ounce (oz.) . . . . .	437½.	9.9114	One ounce.	28.3495
1 Pound (lb.) . . . . .	7000.	14.5833	One lb.=16oz	453.5925
<b>METRIC WEIGHT.</b>				
1 Milligramme (mg.) . . . . .	0.0154			0.0010
1 Centigramme (cg.) . . . . .	0.1543	0.0003	0.0003	0.0100
1 Decigramme (dg.) . . . . .	1.5432	0.0032	0.0035	0.1000
1 Gramme (gm.) . . . . .	15.4323	0.0321	0.0352	One gramme
1 Decagramme (Dg.) . . . . .	154.3234	0.3215	0.3527	10.
1 Hectogramme (Hg.) . . . . .	1543.2348	3.2150	3.5273	100.
1 Kilogramme (Kg.) . . . . .	15432.3487	32.1507	35.2739	1000.
<b>APOTHECARY (AM.) FL. M.</b>				
Distilled water at 15.6°C. (60°F.)				
1 Minim (m.) . . . . .	0.9493	0.0010	0.0021	0.0615
1 Fluidrachm (fl. ʒ) . . . . .	56.9618	0.1186	0.1301	3.6911
1 Fluidounce (fl. ʒ) . . . . .	455.6944	0.9493	1.0413	29.5285
1 Pint (O) . . . . .	7291.1107	15.1188	16.6616	472.4563
1 Gallon (C) . . . . .	58328.8862	121.4004	133.2928	3779.6505
<b>IMPERIAL (BR.) FLUID M.</b>				
Distilled water at 15.6°C. (60°F.)				
1 Minim (m.) . . . . .	0.9114	0.0019	0.0021	0.0590
1 Fluid drachm (fl. ʒ) . . . . .	54.6875	0.1139	1/8	3.5437
1 Fluid ounce (fl. ʒ) . . . . .	437.5	0.9114	1.	28.3495
1 Pint (O) . . . . .	8750.	18.2292	20 (1¼ lbs.)	566.9906
1 Gallon (C) . . . . .	70000.	145.8336	160 (10 lbs.)	4535.9250
<b>METRIC FLUID MEASURE.</b>				
Distilled water at 15.6°C (60°F.)				
1 Cubic Centimetre* (C. c.) . . . . .	15.4178	0.0321	0.0352	0.9990
1 Centilitre (cl.) . . . . .	154.1786	0.3212	0.3524	9.9906
1 Decilitre (dl.) . . . . .	1541.7867	3.2120	3.5240	99.9061
1 Litre † (l.) . . . . .	15417.8671	32.1205	35.2408	999.0618
1 Decalitre (Dl) . . . . .	154178.6718	321.2055	352.4083	9990.6188
1 Hectolitre (Hl.) . . . . .	1541786.7180	3212.0556	3524.0839	99906.1880
1 Kilolitre (Kl.) . . . . .	15417867.1800	32120.5566	35240.8392	999061.8800

\* Also called a Millilitre, a cube whose edge measures one one-hundredth of a metre, and which contains one gramme of distilled water at its greatest density.

† A litre of distilled water, at its greatest density, weighs a kilogramme.

## FLUID MEASURE EQUIVALENTS.

UNITS OF WEIGHT AND MEASURE.	FLUID MEASURE EQUIVALENTS OF DISTILLED WATER AT 15.6° C. (60° F.)				
	In American Minims.	In Apothe- cary (Am.) fluid oz. (455.7 grs.)	In Impe- rial (Br.) fluid oz. (437½ grs.)	In Metric Cubic Cen- timetres.	In Cubic Inches.
APOTHECARY WEIGHT.					
1 Grain (gr.) . . . . .	1.0533	0.0022	0.0023	0.0649	
1 Scruple (ʒ) . . . . .	21.0667	0.0442	0.0457	1.2972	
1 Drachm (ʒ) . . . . .	63.2002	0.1327	0.1371	3.8916	
1 Ounce (ʒ) . . . . .	505.6019	1.0533	1.0971	31.1326	
1 Pound (lb.) . . . . .	6767.2238	12.6396	13.1657	373.5921	
AVOIRDUPOIS WEIGHT.					
1 Ounce (oz.) . . . . .	460.8360	0.9600	1.	28.3755	
1 Pound (lb.) . . . . .	7373.3760	15.3600	16.	454.0075	
METRIC WEIGHT.					
1 Milligramme (mg.) . . . .	0.0162				
1 Centigramme (cg.) . . . .	0.1627	0.0003	0.0003	0.0100	
1 Decigramme (dg.) . . . .	1.6270	0.0033	0.0035	0.1001	
1 Gramme (gm.) . . . . .	16.2700	0.0338	0.0353	1.0009	
1 Decagramme (Dg.) . . . .	162.7003	0.3389	0.3530	10.0093	
1 Hectogramme (Hg.) . . . .	1627.0039	3.3896	3.5307	100.0938	
1 Kilogramme (Kg.) . . . .	16270.0399	33.8969	35.3070	1000.9385	
APOTHECARY (AM.) FL. M.					
1 Minim (m.) . . . . .	One Minim.	1-480 (1 m.)	0.0021	0.1615	0.0037
1 Fluid drachm (fl. ʒ) . . . .	60-1 fl.dr	⅓ (1 fl.dr.)	0.1302	3.6911	0.2256
1 Fluid ounce (fl. ʒ) . . . .	480-1 fl.dr	1 fl.oz.)	1.0413	29.5285	1.8047
1 Pint (O) . . . . .	7680.	16. (1 pt.)	16.6616	472.4563	28.8750
1 Gallon (C) . . . . .	61440.	128. (1 gal.)	133.2928	3779.6505	231.
IMPERIAL (BR.) FLUID M.					
1 Minim (m.) . . . . .	0.9600	0.0020	1-480 (1 m.)	0.0590	0.0036
1 Fluid drachm (fl. ʒ) . . . .	57.6004	0.1200	⅓ (1 fl.dr.)	3.5437	0.2166
1 Fluid ounce* (fl. ʒ) . . . .	460.8032	0.9600	one fl.oz.)	28.3495	1.7330
1 Pint (O) . . . . .	9216.0640	19.2001	20 (1 pt.)	566.9906	34.6592
1 Gallon (C) . . . . .	73728.1280	153.6011	160 (1 gal.)	4535.9250	277.2738
METRIC FLUID MEAS.					
1 Cubic Centimetre (C.c.) . . .	16.2554	0.0338	0.0352	One Cubic Centimetre	0.0610
1 Centilitre (cl.) . . . . .	162.5547	0.3386	0.3527	10.	0.6102
1 Decilitre (dl.) . . . . .	1625.5471	3.3865	3.5274	100.	6.1027
1 Litre (l.) . . . . .	16255.4716	33.8651	35.2739	1000.	61.0270
1 Decalitre (Dl.) . . . . .	162554.7160	338.6514	352.7393	10000.	610.2705
1 Hectolitre (Hl.) . . . . .	1625347.1600	3386.5149	3527.3939	100000.	6102.7052
1 Kilolitre (Kl.) . . . . .	16255471.6000	33865.1496	35273.9399	1000000.	61027.0520

\* 24 American fluidounces = 25 British fluidounces + one grain.

The foregoing table is carefully and accurately calculated from the most reliable data, and will be of much service to the druggist and student in calculating and converting weights and measures, and showing their relation to each other.

For more convenient reference the table may be removed and framed, or, if desired, an extra copy of the table on heavy paper, suitable for that purpose, will be sent, by enclosing 10 cents to this office.

In reviewing the subject of weights and measures, as it now stands, we can see no way but for the druggist to submit for the present, and trust to time and intelligent effort to evolve order out of the chaos that now reigns. Our systems are certainly better and more accurate if not so profitable as were those of our forefathers, who traded with the Indians for furs, and counted the weight of their hand for a pound and the weight of their foot for two pounds.

If the metric system could be adopted in all our business transactions, as it is in Continental Europe, it would no doubt be the best of any system yet devised, as its ratio is decimal and its units are equivalent, but in this country and Great Britain the prevailing systems are so firmly rooted that it will be a long time before they can be overturned.

Authors and writers of new text-books may do much to bring about a uniformity by avoiding all useless or unnecessary weights and measures. Our text-books in this country should be as far as possible in our commercial weights and measures. We have to retain the troy grain, but can readily dispense with all other troy or apothecary denominations. It is as easy to write 20 grains or 60 grains as a scruple or a drachm, and mistakes are much less liable to occur. The troy or apothecary ounce may readily be written in grains, and the troy or apothecary pound is never used by druggists.

Should the time ever come when the metric system is adopted as the commercial system of this country, it will then be time for the druggist to adopt it in making his preparations. As it is, he should familiarize himself with it, be prepared with the weights and measures, and wait for the millennium.

## HEAT MEASURES.

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As with our weights and measures of capacity, so with our Heat Measures—much confusion exists because of the different scales in use. The only scales now used to any extent are those of Fahrenheit, Réaumur, and Celsius; the latter being known in most countries as the *Centigrade* scale. The Fahrenheit scale is chiefly used in America and Great Britain, the Reaumur in Germany, and the Centigrade in France and other countries of Europe, and in scientific calculations in nearly all countries. Of the three scales mentioned, the Centigrade is the best suited for all purposes, and it is to be hoped that the time is not far distant when it will become the universal heat measure of the world.

Thermometric scales are calculated from the expansion of mercury or alcohol in a small vacuum tube having usually a bulb or reservoir at the bottom.

The CENTIGRADE scale assumes the temperature at which water freezes as  $0^{\circ}$ , and the temperature at which it boils with the barometer at 30 inches, as  $100^{\circ}$ , making  $100^{\circ}$  between the freezing and boiling point of water.

The FAHRENHEIT scale assumes the temperature at which water freezes as  $32^{\circ}$ , and the temperature at which it boils with the barometer at 30 inches, as  $212^{\circ}$ , making  $180^{\circ}$  between the freezing and boiling point of water.

The RÉAUMUR scale, which is seldom used in this country, assumes the temperature at which water freezes as  $0^{\circ}$ , and the temperature at which it boils with the barometer at 30 inches, as  $80^{\circ}$ , making  $80^{\circ}$  between the freezing and boiling point of water.

The following table shows a comparison of the scales from the freezing to the boiling point of water :

	C.	F.	R.	
Water	100 . . . . .	212 . . . . .	80	boils.
	95 . . . . .	203 . . . . .	76	
	90 . . . . .	194 . . . . .	72	
	85 . . . . .	185 . . . . .	68	
	80 . . . . .	176 . . . . .	64	
	75 . . . . .	167 . . . . .	60	
	70 . . . . .	158 . . . . .	56	
	65 . . . . .	149 . . . . .	52	
	60 . . . . .	140 . . . . .	48	
	55 . . . . .	131 . . . . .	44	
	50 . . . . .	122 . . . . .	40	
	45 . . . . .	113 . . . . .	36	
	40 . . . . .	104 . . . . .	32	
	35 . . . . .	95 . . . . .	28	
	30 . . . . .	86 . . . . .	24	
	25 . . . . .	77 . . . . .	20	
	20 . . . . .	68 . . . . .	16	
	15 . . . . .	59 . . . . .	12	
	10 . . . . .	50 . . . . .	8	
	5 . . . . .	41 . . . . .	4	
Water	0 . . . . .	32 . . . . .	0	freezes.

It will be seen by the foregoing scales that a Centigrade degree is  $1\frac{4}{5}$  Fahrenheit, or  $\frac{4}{5}$  Réaumur degrees; that a Fahrenheit degree is  $\frac{5}{9}$  Centigrade, or  $\frac{4}{9}$  Réaumur degrees; and that a Réaumur degree is  $1\frac{1}{4}$  Centigrade, or  $2\frac{1}{4}$  Fahrenheit degrees.

The following rules will be found convenient for reducing or converting one scale to another :

To reduce Centigrade to Fahrenheit.

RULE.—*Multiply the given degrees Centigrade by  $1\frac{4}{5}$  ( $\frac{9}{5}$ ), and add 32 to the product.*

EXAMPLE.—How many Fahrenheit degrees in 25 Centigrade degrees?  $25 \times \frac{9}{5} + 32 = 77$  Fahrenheit degrees.

To reduce Réaumur to Fahrenheit.

RULE.—*Multiply the given degrees Réaumur by  $2\frac{1}{4}$  and add 32 to the product.*

To reduce Fahrenheit to Centigrade.

RULE.—*Subtract 32 from the given degrees Fahrenheit and divide the remainder by  $1\frac{4}{5}$  ( $\frac{5}{9}$ ).*

EXAMPLE.—How many Centigrade degrees in 176 Fahrenheit degrees?  $176 - 32 \div \frac{5}{9} = 80$  Centigrade degrees.

To reduce Fahrenheit to Réaumur.

RULE.—*Subtract 32 from the given degrees Fahrenheit and divide the remainder by  $2\frac{1}{4}$  ( $\frac{9}{4}$ ).*

To reduce Réaumur to Centigrade.

RULE.—*Multiply the given degrees Réaumur by  $1\frac{1}{4}$ .*

To reduce Centigrade to Réaumur.

RULE.—*Multiply the given degrees Centigrade by  $\frac{4}{5}$ .*

In reducing Fahrenheit to other scales or *vice versa* 32 is added or subtracted because the Fahrenheit scale is marked 32 where the other scales are marked 0, viz., at the freezing point of water. Bear in mind that in computing degrees below 0° Centigrade, or Réaumur, the product of the multiplication is a minus quantity, and that adding +32 to the minus quantity is the same as taking the difference between them. Recent American works on Pharmacy and Chemistry give both the Centigrade and Fahrenheit degrees, so there is no reason that the druggist should not soon be as familiar with the one as the other.

The temperature at which the specific gravity of substances is usually taken and recorded, is 15.6° Centigrade, or 60° Fahrenheit, or 12.4° Réaumur. In making experiments or calculations that require accuracy, this must be well understood, and the substances to be used must be brought to this temperature.

#### SUMMARY.

$$1^{\circ} \text{ C.} = 1.80^{\circ} \text{ F.} = 0.80^{\circ} \text{ R.}$$

$$1^{\circ} \text{ F.} = 0.55^{\circ} \text{ C.} = 0.44^{\circ} \text{ R.}$$

$$1^{\circ} \text{ R.} = 2.25^{\circ} \text{ F.} = 1.25^{\circ} \text{ C.}$$

$$\text{C. degrees} \times 9 \div 5 + 32 = \text{F. degrees.}$$

$$\text{C.} \quad \times 4 \div 5 \quad = \text{R.} \quad "$$

$$\text{F.} \quad -32 \times 5 \div 9 = \text{C.} \quad "$$

$$\text{F.} \quad -32 \times 4 \div 9 = \text{R.} \quad "$$

$$\text{R.} \quad \times 9 \div 4 + 32 = \text{F.} \quad "$$

$$\text{R.} \quad \times 5 \div 4 \quad = \text{C.} \quad "$$

A unit of heat is the amount of heat necessary to raise a certain quantity of water one degree.

The French unit, called a *caloric*, is usually adopted. It is the amount of heat required to raise one kilo (2.2046215 lbs. avoirdupois) of water one degree centigrade; that is, from 0° to 1° C.



## SPECIFIC WEIGHT OR GRAVITY.

Specific weight or gravity is the weight of a substance compared with the weight of an equal volume of some other substance taken as a standard.

Distilled water at 15.6° C. (60° F.) is the standard with which all solids and liquids are compared to calculate their specific gravity.

The specific gravity of water is expressed by unity, as 1, 1.00, 1.000, 1.0000, etc., substances heavier than water being more than a unit, lighter than water, less than a unit, expressed in decimals.

Air or hydrogen at 15.6° C. (60° F.), and the barometer at 30 inches, are the standards with which gases are compared to determine their specific gravity.

As applied to pharmacy, the specific gravities of solids and liquids only are required, therefore the processes for estimating their specific gravity, only, will be considered in this article. For the specific gravity of gases our readers are referred to the standard works on Chemistry.

Few druggists are provided with delicate specific gravity apparatus, and indeed it is unnecessary that they should be, for a few simple articles, always at hand, will suffice for the druggists' purpose as well as the most elaborate and costly apparatus. A thermometer, a thin bottle and accurate balances or scales are all the apparatus required for finding the specific gravity of liquids and solids, and druggists seldom need to determine the specific gravity of gases.

The following are the simple directions for

### CALCULATING THE SPECIFIC GRAVITY OF LIQUIDS.

FIRST.—Take a thin bottle that will hold three or four ounces;\* paste strips of paper on two opposite sides and weigh the bottle accurately, marking the weight in grains,†

\* A long-necked bottle, that 1000 grains of water will fill into the neck, is the most accurate. Specific gravity bottles, made very light and designed to hold 100 or 1000 grains, or 50, 250 or 500 grammes, may be obtained of dealers in chemical ware.

† Metric weight may be used instead of grains. Grains are mentioned because American druggists are so much more familiar with this weight than with the metric system.



on one of the strips. Then weigh in the bottle just 1000 grains of distilled water at a temperature of  $15.6^{\circ}\text{C}$ . ( $60^{\circ}\text{F}$ .) and mark the strips of paper on each side of the bottle just at the surface of the water, when the bottle is standing perfectly level. Mark 1000, the weight of the water, under the weight of the bottle and add them together for the *gross weight*, then empty the bottle and it is ready for use.

SECOND.—Having brought the liquid to be calculated to the required temperature,  $15.6^{\circ}\text{C}$ . ( $60^{\circ}\text{F}$ .), pour it into the bottle previously used, until its surface comes just level with the water-level marks on the strips of paper; then weigh it accurately, noting the gross weight in grains.

THIRD.—Find the difference between the gross weight of the first and second operations. If the weight of the first operation is greater than the second, *subtract* the difference from 1000 and point off three places as decimals. If the weight of the first operation is less than the second, *add* the difference to 1000 and point off three places as decimals.

EXAMPLE 1. The gross weight of a bottle with 1000 grains of water is 1723 grains; the gross weight of the same volume of a liquid in the same bottle is 1671 grains. What is the specific gravity of the liquid?

$$1723 - 1671 = 52 \text{ difference.}$$

$$1000 - 52 = 0.948 \text{ specific gravity of liquid.}$$

EXAMPLE 2. The gross weight of a bottle with 1000 grains of water is 1723 grains; the gross weight of the same volume of a liquid is 2184 grains. What is the specific gravity of the liquid?

$$2184 - 1723 = 461 \text{ difference.}$$

$$1000 + 461 = 1.461 \text{ specific gravity of liquid.}$$

This method of determining the specific gravity of liquids is quite accurate, and very convenient when the bottle is once prepared. It is also adapted to small quantities of liquids as it can be calculated for 100 grains or 10 grains in the same general manner. It can be used also for light or heavy liquids, which is another convenience.

The Hydrometer is an instrument used for determining the specific gravity of liquids. There are many kinds, but nearly all act on the same principle, viz.: The depth to which they sink in the liquid, which is shown by the graduated scale in the stem of the instrument. It is not accurate enough for fine work and cannot be used for small quantities of liquids.

The Hydrometer is principally useful for showing the

proof of spirits, the degree of acids, syrups, etc., but is not adapted to the general work of calculating specific gravity in the business of the pharmacist.

The spirit Hydrometer will not answer for heavy liquids, nor the acid nor syrup Hydrometer for the light liquids.

The Government Hydrometer for spirits which has the thermometer scale attached is of much value in estimating the proof of spirits.

### CALCULATING THE SPECIFIC GRAVITY OF SOLIDS.

The druggist is so seldom required to calculate the specific gravity of solids, that mere mention, only, of the methods will be given here.

*Solids heavier than water* are first weighed in the ordinary way, and then, by suspending them to one side of the balance by a fine thread, are immersed in water and weighed. The ordinary weight divided by the loss of weight in water, gives the specific gravity of the solid.

*Solids lighter than water* are first weighed, and then attached or tied to some heavy metal of known weight and specific gravity; the two substances are then weighed and immersed in water together and the loss of weight of the lighter substance found by deducting the loss of weight of the heavy metal, previously found, from the total loss. The original weight of the lighter substance is then divided by its loss of weight in water, as shown by the former operation and the result is the specific gravity of the substance.

*Solids soluble in water* are first weighed by the balance and then weighed suspended in some liquid in which they are insoluble, as Naphtha, Alcohol or Oil. The weight in the liquid subtracted from the ordinary weight gives the loss of weight; the ordinary weight is divided by the loss of weight thus obtained, and the quotient multiplied by the specific gravity of the liquid in which the solid was weighed — this gives the specific gravity of the solid.

*Powdered substances* are first weighed, and their weight added to that of the specific gravity bottle and 1000 grains of water, as described for calculating the specific gravity of liquids. The powder is then put in the bottle and enough distilled water at 15.6° C. (60° F.) added to fill it to the water-level marks on the bottle. It is then weighed and its weight subtracted from the gross weight previously obtained; this shows the loss of weight in water. The ordinary weight of the powder is now divided by the loss of weight as shown by the subtraction; the quotient is the specific gravity of the powder.

## PART II.

### WORKING PROCESSES.

#### DIALYSIS.

The process by which certain substances are separated from other substances with which they are combined in solution, by means of the diffusibility of liquids through a thin membrane, is called Dialysis.

The physical principle, involved in this operation, is that of the diffusion of liquids, called *endosmosis* and *exosmosis*. Although this process is not officinal, it may be frequently employed to advantage in pharmacy, and it no doubt merits more consideration than it has heretofore received.

In pharmacy, dialysis is employed to separate what are known as *colloid* (glue-like) substances, from their combination in solution with crystallizable substances. This is accomplished by means of an apparatus called a Dialyzer, a simple form of which is here illustrated.



This apparatus may be made by any druggist, without expense, and is sufficient for the requirements of most retail dealers. Larger apparatus may be made on the same principle. It consists of an ordinary white glass 7-inch lamp-shade, the bottom of which is covered over with parchment paper which is large enough to extend up the

sides of the shade nearly two inches, and which is held in place by two rubber bands. The solution to be dialysed is placed in the apparatus thus constructed, and floated on distilled water, contained in any convenient earthenware vessel. (An earthenware milk-pan, which is shown in the cut, is convenient for this purpose, or an ordinary wash-bowl may be used.) The dialyzer may be suspended by a string from above, or set upon bottles in the earthenware vessel, so that the surface of the liquid in the dialyzer may be about on a level with the surface of the water in the vessel.

Parchment paper for this purpose may be made by immersing firm, unsized paper in a mixture of two measures of Sulphuric Acid with one measure of water, and afterward, washing it thoroughly with pure water to remove all traces of acid. It may also be bought, at a small price, of jobbers or dealers in pharmaceutical apparatus.

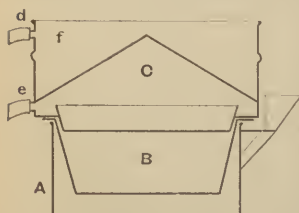
Dialysis is applicable only to aqueous solutions, and the process is used sometimes to obtain the colloid, and sometimes the crystalloid, principles from their solutions. The colloid substances are always retained in the floating vessel or dialyzer, while the crystalloid substances are found in the water with which the dialysis is conducted. In working the process to obtain the colloid substances, the water in the vessel should be changed every day, but in working it to obtain the crystalloids, as little water as is necessary for the purpose should be used, for it has subsequently to be evaporated to obtain the crystallizable substance. Gum arabic is a familiar example of a colloid, and sugar, of a crystalloid, substance. If they are both represented in a solution, the gum will be retained in the floating vessel, while the sugar will gradually be transferred to the water in which it floats.

Dialysed iron is probably the most familiar colloid preparation made by dialysis. In conducting the process of dialysis it should be continued so long as the water in the lower vessel contains appreciable traces of the soluble crystalloid, or other substance, which the process is designed to remove.

## DISTILLATION.

The process of vaporizing a liquid or other substance, by the aid of heat, and then condensing the vapor to a liquid by cold, in an apparatus called a still,\* is known as Distillation.

\* FENNER'S WATER-BATH AND STILL is a convenient, simple apparatus for evaporating and distilling.



It consists of a cylindrical, shallow vessel, *A*, into which is fitted the shallow evaporating pan, *B* (which serves as the vessel for open evaporation, and also for evaporation during distillation); and the conical still top, *C*, in which the vapor, which rises, is condensed during the process of distillation. This apparatus is constructed specially for evaporating and distilling; it is low and shallow, having a large bottom surface, fitting it well for rapid evaporation and distillation.

Fenner's Water-bath Percolator and Still may be employed for the

This process is used for separating liquids of a less from those of a greater specific gravity ; for separating liquids from soluble substances which they hold in solution ; for separating volatile substances from grosser matter with which they are associated, and for purifying and freeing liquids from objectionable matter.

As applied to pharmacy, distillation is employed for recovering alcohol from many preparations which are required to be concentrated by evaporation, such as fluid extracts, solid extracts, etc., for distilling medicinal waters and spirits, for obtaining ethers, essential oils, etc., and for many other purposes.

Although distillation is frequently directed in the Pharmacopœia, no advice nor instructions are given in regard to it, it being assumed that druggists are sufficiently familiar with the process to enable them to conduct it properly. A few suggestions, however, may not here be amiss.

To distill medicated waters or other aqueous substances no water-bath is required, the distillation of such liquids being more rapid, and equally as satisfactory, without it. If herbs, leaves, flowers, seeds or other similar substances are to be distilled, they should be protected from contact with the bottom of the still by a false bottom, so that they may not "scorch," and sufficient water should be used with them to prevent the extract which collects at the bottom from "burning down." At least, double the quantity of water that is taken of the drug should be used.

To obtain oils from medicinal plants, seeds, etc., the most approved method is to pass a current of steam through the herbs, or other substances, by which the particles of oil are vaporized and carried over with the steam and condensed, being afterwards gathered from the surface of the water.

To distill or recover Alcohol or any substance of less specific gravity than water, the liquid should be placed in the water-bath and the heat communicated to it, by heating the water surrounding it. The boiling point of the alcohol or other lighter liquid being lower than the boiling point of water, it is vaporized and condensed in the still ; the heavier liquids and extractive matter remaining in the water-bath.

When drugs are percolated with alcohol, or a partly alcoholic menstruum, the menstruum remaining in the drug can be

same purposes, but as it is constructed for percolation also, corresponding sizes do not present so large a surface for evaporation and distillation as does the Water-bath and Still.

Druggists will find it a great convenience to have the Water-bath and Still, as well as the Water-bath, Percolator and Still, for they are often both required at the same time.

A cut of the Water-bath and Still is shown on page 60.

recovered by transferring the moist drug to the water-bath of the still, and distilling in the usual manner. If the water-bath percolater and still is used, it is unnecessary to transfer the drug, as the still top can be adjusted, heat applied, and the distillation completed without further trouble.

The process of distillation is a very important one in pharmacy, and is much less employed than it should be.

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## EVAPORATION.

As applied to pharmacy, evaporation is the process by which, with the aid of heat, the volume of liquids or other substances may be reduced. It is employed for many purposes in the practice of pharmacy, and is so familiar to druggists that but little need be said regarding it in this article.

The vessels used for evaporating should be broad and low, or shallow, to give a larger surface for the application of heat and the escape of vapor. Evaporating dishes are made of glass, iron (enameled or glazed), platinum, porcelain, tin, etc.

Heat is applied in various ways for the purpose of evaporating — by the ordinary methods, by water-bath, sand-bath, steam, heated air, etc.

For rapid evaporation heat over an open fire or by means of steam is best, but for making many preparations, such as extracts, fluid extracts, etc., slower evaporation is necessary, that the preparation may not be injured by the heat. For this purpose the water-bath\* is the most convenient for druggists' use, as by it the heat can be regulated and maintained at any desired temperature. In large establishments the vacuum pan, which is still better for the purpose, is employed.

The most serviceable, cheap, evaporating dish, is the ordinary granite-iron stove skillet, or frying pan. Any ordinary evaporating dish may be set in a vessel of water, which will answer as a water-bath. A sand-bath may be made by partly filling an iron basin with sand and setting the evaporating dish in it.

For very slow evaporation, a warming closet may be made by fastening a box against the wall and heating it with a lamp

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\* The water bath which forms a part of FENNER'S WATER-BATH AND STILL is very convenient for the purpose of evaporation. It is shown in the sectional view on page 22 by the vessels *A* and *B*. FENNER'S WATER-BATH PERCOLATOR see page 34, may also be used for the same purpose, it being necessary only to put the liquid to be evaporated into the percolator and leave off the cover.



placed underneath a hole in the bottom, smaller holes should also be provided in the upper surface for the escape of vapor. This box can be so arranged with shelves that a number of evaporating dishes may be placed in it at the same time.

## FILTRATION.

The process of separating insoluble matter from liquids, by means of any substance or medium which will prevent its passage, is called filtration.

Filtration, as it is employed in pharmacy, is usually conducted by means of filtering paper contained in a conical receptacle called a funnel\*, but larger operations are carried on by other contrivances which will admit of more rapid filtration.

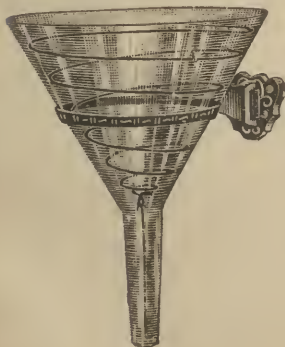
The process of filtration is so familiar that it needs no explanation, but a few suggestions are here made for the benefit of the inexperienced.

In filtering a liquid which contains a precipitate (unless the precipitate is designed to clear the liquid, as magnesia or pumice stone are used) the liquid should be poured carefully off and filtered first, the precipitated portion being added after most of the liquid has passed through the filter; this makes the process more rapid.

The first portion that passes through the filter should be returned to it and refiltered, as, when the filter is dry, it admits of the passage of small particles which are retained when its fibers have had time to swell by the absorption of moisture.

In filtering liquids containing albuminous or gummy pre-

\*FENNER'S SPIRAL FILTER RACK is a convenience for keeping the filtering paper off the sides of the funnel when filtering. It is made of tinned steel wire, of different sizes to fit different size funnels.



It is simple, cleanly, durable, efficient, and cheap. The cut shows it as it is adjusted in the funnel ready for use.

Heat often assists the process of filtering heavy liquids or oils. It may be conveniently applied by putting a filter inside of Fenner's water-bath percolator, and applying heat by means of the water-bath. For supporting the funnel during filtration, Fenner's Funnel Rack, which is shown in the cut, is very convenient.

Further remarks on filtering will be found in the article on Economy and Filtering, page 32.

precipitates it is also advantageous to put a coarse cotton cloth strainer on the inside of the filter paper, this catches the precipitate which may be removed with it, or in which it may be pressed to strain out the liquid, and thus makes the filtration more rapid.

A plaited filter is generally used, except when a filter rack is employed, then the ordinary folded (quartered) filter is used.

Besides filtering through paper, other means are often employed by druggists. Syrups and heavy liquids may be filtered through a flannel or cotton strainer, or felt filters that are made expressly for this purpose. Charcoal and sand in alternate layers are employed for filtering light liquids, when larger quantities are to be filtered.

A little charcoal in powder, or powdered pumice stone sprinkled in the filter, will often assist to clear preparations that are difficult to filter clear.

### FINENESS OF POWDER.

To properly obtain the soluble constituents of drugs by the process of percolation, they should be so comminuted or divided that the menstruum may readily dissolve all soluble matter.

To this end, different drugs are directed to be reduced to different degrees of fineness as experience has shown to be best suited to their nature.

The United States Pharmacopœia has adopted the following standard for the fineness of powders:

<i>A very fine powder</i>	{ should pass through a sieve having 80 or more meshes to the linear inch,	} equals No. 80 powder.
<i>A fine powder</i>	{ should pass through a sieve having 60 meshes to the linear inch,	} equals No. 60 powder.
<i>A moderately fine powder</i>	{ should pass through a sieve having 50 meshes to the linear inch,	} equals No. 50 powder.
<i>A moderately coarse powder</i>	{ should pass through a sieve having 40 meshes to the linear inch,	} equals No. 40 powder.
<i>A coarse powder</i>	{ should pass through a sieve having 20 meshes to the linear inch,	} equals No. 20 powder.

Other degrees of fineness than the foregoing are often directed.



It is desirable for the purpose of percolation that the powder used should be as uniform as possible, it is therefore directed in the Pharmacopœia that "not more than a small proportion of the powder should be able to pass through a sieve having ten meshes more to the linear inch." While this direction is valuable for securing a uniform powder and thereby promoting the process of percolation, it is, in our opinion, unwise to specify this limit; for in reducing drugs to different fineness of powder by any process which druggists may command, it is obvious that unless the powder is *very fine* quite a proportion of it will be much finer than the coarsest powder which will pass through the sieve having the required number of meshes to the inch. If this portion is separated from the coarser powder by sifting, that which remains will not truly represent the entire substance of the drug from which it was prepared.

In preparing a powder, therefore, for percolation, the entire quantity of drug which is taken should be reduced to a powder that will pass through a sieve having the required number of meshes; or, if this produces a powder too fine for successful percolation a coarser sieve should be used, for it is better to use a coarser powder than to remove any portion of the drug which would be represented by the finer powder.

For the reasons stated the powders directed in the formulæ of the U. S. P., are, as a rule, too fine for successful percolation by the majority of druggists, and better results will be secured by using about one grade coarser powder than is designated.

Drugs are usually reduced to the required degree of fineness for percolation by grinding in a drug mill, but when finer powders are required the old, time-honored mortar and pestle comes into play. But few druggists, however, attempt to make what are known in the market as "powdered drugs." They are usually bought of reliable houses who make a business of putting them up.

Drugs "ground for percolation" may also be bought in the market, but as they always come in bulk without the guarantee of a reliable house, they are liable to adulteration, and it is much better for the druggist to grind them himself, as needed, from reliable crude drugs.

## MACERATION.

When percolation came to be the officinal process for exhausting drugs, maceration, the process of our forefathers,

was mostly abandoned, but we are glad to see that in the present pharmacopœia its value is again recognized, and that many preparations, which have of late been made by percolation, are now again made by maceration. In addition to this, the new pharmacopœia, in making most of the tinctures, and some extracts gives the very much needed direction to macerate 24 hours with a portion of the menstruum before packing in the percolator. Maceration is the necessary primary step to successful percolation. It softens the drug, dissolves its soluble properties and loads the menstruum with them, ready to be carried away by the subsequent process of percolation.

Whenever percolation is employed, sufficient time should be given for maceration to loosen and dissolve the soluble properties of the drug. If alcohol is the menstruum employed, the maceration may be conducted after packing the percolator, but if water forms a portion of the menstruum, the drug should first be macerated with a portion of the menstruum, sufficiently long to allow it to swell before it is packed in the percolator.

A convenient covered vessel may be used for macerating drugs designed to be percolated. For small quantities, glass, specie or salt mouth jars, or covered granite-ware stew-pans, are very convenient, even tin cans will not be injurious for most drugs. Drugs to be thus macerated should be thoroughly moistened with a portion of the menstruum and covered to prevent exposure and evaporation. When preparations are prepared entirely by maceration, the drugs should be put in a suitable glass jar or vessel, the menstruum added, and be frequently agitated for several days.

## PERCOLATION.

The directions for percolation are much more complete and minute in the present, than in the former, revision of the pharmacopœia, they are therefore repeated in full.

“The process of percolation or displacement directed in this (1880) Pharmacopœia consists in subjecting a substance or substances in powder contained in a vessel called a percolator, to the solvent action of successive portions of menstruum, in such a manner that the liquid as it traverses the powder in its descent to the recipient, shall be charged with the soluble portion of it, and pass from the percolator free from insoluble matter.

“When the process is successfully conducted, the first portion of the liquid or percolate, passing through the percolator will be nearly saturated with the soluble constituents of the substance treated; and if the quantity of menstruum be sufficient for its exhaustion, the last portion of the per-

colate will be destitute of color, odor and taste, other than that possessed by the menstruum itself.

"The percolator most suitable for the quantities contemplated by this Pharmacopœia should be nearly cylindrical, or slightly conical, with a funnel-shaped termination at the smaller end. The neck of this funnel-end should be rather short, and should gradually and regularly become narrower toward the orifice, so that a perforated cork, bearing a short glass tube, may be tightly wedged into it from within until the end of the cork is flush with its outer edge. The glass tube, which must not protrude above the inner surface of the cork, should extend from one and one-eighth to one and one-half inch (three to four centimetres), beyond the outer surface of the cork, and should be provided with a closely fitting rubber tube, at least one-fourth longer than the percolator itself, and ending in another short glass tube, whereby the rubber tube may be so suspended that its orifice shall be above the surface of the menstruum in the percolator, a rubber band holding it in position.

"The dimensions of such a percolator, conveniently holding 500 grammes of powdered material, are preferably the following: Length of body, fourteen inches (36 centimetres); length of neck, two inches (5 centimetres); internal diameter at top, four inches (10 centimetres); internal diameter at beginning of funnel-shaped end, two and one-half inches (6.5 centimetres); internal diameter of the neck, one-half inch (12 millimetres), gradually reduced at the end to two-fifths of an inch (10 millimetres). It is best constructed of glass, but, unless so directed, may be constructed of a different material.

"The percolator is prepared for percolation by gently pressing a small tuft of cotton into the space of the neck above the cork, and a small layer of clean and dry sand is then poured upon the surface of the cotton to hold it in place.

"The powdered substance to be percolated (which must be uniformly of the fineness directed in the formula, and should be perfectly air-dry before it is weighed), is put into a basin, the specified quantity of menstruum is poured on and it is thoroughly stirred with a spatula, or other suitable instrument, until it appears uniformly moistened. The moist powder is then passed through a coarse sieve — No. 40 powders, and those which are finer, requiring No. 20 sieve, whilst No. 30 powders require a No. 15 sieve for this purpose. Powders of a less degree of fineness usually do not require this additional treatment after the moistening. The moist powder is now transferred to a sheet of thick paper and the whole quantity poured from it into the percolator. It is then shaken down lightly and allowed to remain in that position for a period varying from fifteen minutes to several hours, unless otherwise directed; after which the powder is pressed, by the aid of a plunger of suitable dimensions, more or less firmly, in proportion to the character of the powdered substance and the alcoholic strength of the menstruum; strongly alcoholic menstrea, as a rule, permitting firmer packing of the powder than the weaker. The percolator is now placed in position for percolation, and, the rubber tube having been fastened at a suitable height, the surface of the powder is covered by an accurately fitting disk of filtering paper, or other suitable material, and a sufficient quantity of the menstruum poured on through a funnel reaching nearly to the surface of the paper. If these conditions are accurately observed, the menstruum will penetrate the powder equally until it has passed into the rubber tube and has reached, in this, the height corresponding to its level in the percolator, which is now closely covered to prevent evaporation, and the apparatus allowed to stand at rest for the time specified in the formula.

“To begin percolation, the rubber tube is lowered and its glass end introduced into the neck of a bottle previously marked for the quantity of liquid to be percolated, if the percolate is to be measured, or of a tared bottle, if the percolate is to be weighed; and by raising or lowering this recipient, the rapidity of percolation may be increased or lessened as may be desirable, observing, however, that the rate of percolation, unless the quantity of material taken in operation is largely in excess of the pharmacopœial quantities, shall not exceed the limit of ten to thirty drops in a minute. A layer of menstruum must constantly be maintained above the powder, so as to prevent the access of air to its interstices, until all has been added, or the requisite quantity of percolate has been obtained. This is conveniently accomplished, if the space above the powder will admit of it, by inverting a bottle containing the entire quantity of menstruum over the percolator in such a manner that its mouth may dip beneath the surface of the liquid, the bottle being of such shape that its shoulder will serve as a cover for the percolator.

“When the dregs of a tincture, or similar preparation, are to be subjected to percolation, after maceration with all or with the greater portion of the menstruum, the liquid portion should be drained off as completely as possible, the solid portion packed in a percolator, as before described, and the liquid poured on, until all has passed from the surface, when, immediately, a sufficient quantity of the original menstruum should be poured on to displace the absorbed liquid, until the prescribed quantity has been obtained.”

The foregoing officinal directions cover the whole *general* subject of percolation, and the remarks which follow are intended as *special* consideration of improved methods, and the difficulties which may arise in applying a general rule to the treatment of a variety of substances.

*The fineness of powder* to be used for percolation has been discussed under the article on fineness of powders, but it may be here repeated that the powders directed in the formulæ of the pharmacopœiæ are, as a rule, too fine for successful percolation, and that the mass of druggists will have “better luck” to choose a grade coarser powder than is specified in the officinal formulæ.

*Moistening the drug* is discussed in the officinal process, and in the article on maceration, and it need only be remarked that it is of great importance to have the drug thoroughly and evenly moistened. Many druggists are in the habit of putting the drug in the percolator and pouring the menstruum upon it to moisten it, without even stirring it up; this should never be done, for, frequently, a portion of the drug will “cake” so that it will not become moistened during the entire process of percolation. The drug should *always* be moistened in a basin or other vessel, before putting into the percolator.

*Macerating before percolating* is discussed in the article on maceration. It may be here repeated, however, that when water is used as a portion of the menstruum for percolation,

the drug should be moistened with the menstruum and allowed to macerate for twenty-four hours, in order that it may swell before, instead of after, packing in the percolator.

*Packing the percolator.* In packing the percolator, much depends upon the nature of the drug, the fineness of the powder, etc. Loose, fibrous, or bulky drugs, such as arnica, stillingia, buchu, etc., cannot be packed very firmly, but should be made as compact as possible; heavy drugs, such as aconite root, valerian, golden seal, etc., do not require so much pressure, but will pack much firmer; soft, spongy, or gummy drugs, such as rhubarb, colocynth or squill, should not be packed very firmly; coarse powders, as a rule, should be packed more firmly than fine. The percolator should be packed from the outside towards the centre and as evenly as possible. A disc of paper and then a cover of perforated tin should be placed upon the surface of the powder after it is packed to secure the even distribution of the menstruum as it is poured upon the drug. A glass or earthenware weight may be used with advantage to hold the drug in its place. It should generally be allowed to macerate for some time after the menstruum is poured on before beginning to percolate.

The *flow of percolate* may be regulated by the rubber tube, as directed in the official process; by a loose cork in the bottom of the percolator; or, if the water-bath percolator is used, by the stop-cock. The rapidity with which the percolate should flow, depends very much upon the nature of the drug, and the quantity required to be obtained as compared with the quantity of drug being percolated; for example, fluid extracts should not be percolated so rapidly as tinctures, nor aconite as rapidly as buchu.

With a certain class of drugs, the alcoholic or hydro-alcoholic menstruum, with which the percolation is conducted, may be forced out by adding water after the menstruum has disappeared from the surface of the drug, and thereby make a saving of alcohol, but with others, which soften or make precipitates with an aqueous menstruum, the percolation must be conducted to the end with the same menstruum. The menstruum remaining in the drug after percolation, may be pressed out with a tincture press and the alcohol recovered from it by distillation.

#### DRUGS DIFFICULT TO PERCOLATE.

Many drugs present difficulties to the ordinary methods of percolation and require special treatment; this is generally

given in the formulæ in which they are found ; but they may be classed in a general way as follows :

1st. Drugs that soften or make a pulpy mass upon the addition of the menstruum, such as orange, gentian, rhubarb, squill, colocynth, etc. Such drugs should be well moistened and macerated before packing : they should be rather coarsely powdered and rather loosely packed, and the percolation, when begun, should be conducted rapidly, and continued to the end with the same menstruum.

2d. Gums and gum-resins which agglutinate or mass together when the menstruum is added. These should be mixed with an equal bulk of sand, sawdust, or rice chaff, and not packed, but placed loosely, in the percolator, and the percolation conducted in the usual manner.

3d. Bulky drugs, like arnica, buchu, chamomile, etc. Although these drugs are not difficult to percolate, they absorb so much menstruum that the expense of making their preparations is considerably increased. These should be packed as firmly as possible, and held down in the percolator with a weight during the process of percolation.

#### ECONOMY IN PERCOLATING AND FILTERING.

Much loss of Alcohol occurs by evaporation when the ordinary percolator or filtering funnel are left uncovered during percolation or filtration. To remedy this difficulty a simple apparatus may be constructed by any druggist who will take the trouble. It is shown in use in the following cut :

*A*, is the wooden cover, large enough to fit the top of a percolator or funnel ; it is bound with a wooden hoop, whose lower edge projects about half an inch below the under surface of the cover ; to the wooden hoop is tacked a piece of moderately thin sheet-rubber, so that the cover, when completed, is like a drum-head, and when it is used to cover a percolator or funnel will make, by its elasticity, an air-tight covering.

*B*, is a funnel tube, so bent as to prevent evaporation or access of air. Through it, fresh menstruum or other liquid may be introduced into the percolator or funnel. A glass or metal tube answers the same purpose, and may be stopped with a cork. This tube may be adjusted by boring a hole in the wooden cover and punching a smaller hole in the rubber, so that it will fit snug around the tube.

*C*, is a rubber tube attached at one end to a glass tube in the cover (which passes through the rubber as heretofore described), and at the other end to a tube in the stopper of the receiving bottle. This tube allows the air to pass from the



receiving bottle into the percolator, and as the liquid fills the bottle the air is forced from it into the percolator or funnel.

*D*, is a rubber tube attached to the percolator that connects with a tube in the stopper of the receiving bottle, through which the percolate passes; if the lower end of the percolator is too large for the rubber tube, a perforated cork,



into which a glass tube is inserted, may be placed in the neck of the percolator for this purpose, as is directed in the pharmacopœia process. By raising or lowering the percolator or the receiving bottle the flow of the percolate can be made more or less rapid, as it works on the principle of the syphon. The receiving bottle may be made of any wide-

mouth bottle, holes being bored in the cork for the insertion of the tubes to which the rubber tubing is attached.

*E*, shows the perforated diaphragm of the percolator.

With this simple arrangement percolation or filtration can be carried on for any length of time without exposure or loss by evaporation.

## WATER-BATH PERCOLATION.

The process of water-bath percolation consists in subjecting the powder contained in a percolator\* surrounded by water, to the action of a warm menstruum during the entire process of maceration and percolation. By the means of the water-bath the menstruum and powder are kept at any desired degree of heat for any length of time.

It is claimed for this process, that the heat employed is of great aid in effecting the solution of the soluble constituents

\*The process of water-bath percolation as applied to pharmaceutical preparations and the apparatus,

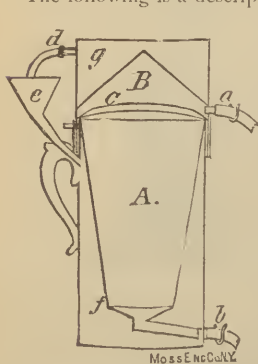
### FENNER'S WATER-BATH PERCOLATOR AND STILL,

were patented February 7, 1882.

The process is an application of the well known fact that a heated menstruum dissolves the soluble portions of drugs much more readily and to a much greater extent than the same menstruum when cold.

The apparatus is constructed with the view of serving its purpose in the best possible manner, and since its introduction it is coming rapidly into use in all parts of the country.

The following is a description and sectional view of the apparatus.



It consists of a Percolator, *A*, suspended in a water-bath and connected externally by a stop-cock through which the percolate is received, and a Still, *B*, which may be adjusted whenever it is needed.

The percolator *A*, is also the vessel into which liquids are put for evaporation and distillation.

The percolator may be removed by unscrewing the stop-cock at *b*, and lifting it out of the water-bath. It should be removed after using in order to dry the apparatus.

The perforated diaphragm at *f* prevents the drug packing in the neck of the percolator and thereby hindering percolation.

The flow of the percolate can be regulated by the stop cock; it also serves to draw off the residue after distillation or evaporation.

The vessel surrounding the Percolator is designed for water, which is to be heated when desired, forming a water-bath for the Percolator and its contents.



of the substance or substances which are being exhausted, and therefore, that it is much more rapid, efficient and economical than the ordinary method of percolation.

By consulting the solubility tables, which may be found in the pharmacopœia and other standard works, it will be seen that the medicinal principles of vegetable drugs (especially the alkaloids and other substances in which their value chiefly consists), are from several to several hundred times more soluble in boiling water or alcohol than in cold. Although the heat employed in water-bath percolation is seldom so high as boiling alcohol or water, yet the solubility of the medicinal principles is relatively increased according to the heat employed; and, as the object of percolation is to exhaust the drug of its soluble medicinal agents no other argument than this for the application of heat during percolation seems necessary, for it is evident that the value of the drug is much more faithfully represented in preparations made in this manner, and, that in making fluid or solid extracts, or other concentrated preparations a much less quantity of menstruum is required to exhaust the drug, than when cold percolation is employed.

As the question may be asked by many if heat does not

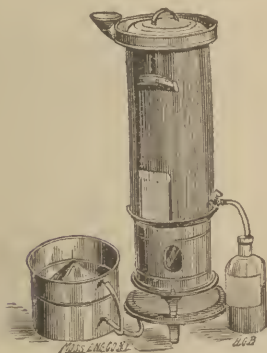
The Still *B*, can be adjusted when desired, by setting its rim into the circular vessel surrounding the top of the water-bath and pouring a little water into the circular vessel, which forms a water seal or joint which prevents the escape of the steam. The vapor rises to the inner surface of the cone of the Still, is condensed by the cold water on the outer surface of the cone, and the distillate is discharged in the form of a liquid at *a*, being conducted through a rubber tube to any convenient receptacle.

The following cut represents the Water-bath Percolator and Still detached, and in use as a percolator. When used for distilling, the cover of the percolator is to be removed and the still top adjusted as heretofore described. When used for evaporating, the cover of the percolator is to be removed, and the evaporation conducted in the ordinary way.

The water-bath percolator can be used as readily for cold percolation as for warm, and, in short, when all things are considered it is the most serviceable, economical and convenient percolator in use.

These Water-bath Percolators and Stills are now being used to a large extent in all parts of the country, and the reports received from parties who have thoroughly tested them are very flattering.

At no distant day the process of water-bath percolation is bound to supersede the ordinary method of percolating as completely as percolation, when it was introduced, superseded the process of maceration.



injure the preparations, it may be here stated that the degree of heat directed cannot be injurious, as it is insufficient to volatilize any of the medicinal principles of the drugs.

The method of conducting water-bath percolation is as follows:

The powdered drug is to be moistened with a portion of the menstruum and either packed in the percolator at once, or after macerating twenty-four hours, as the formula may direct. A certain quantity of menstruum (as directed in the formula), is then to be poured upon the drug and it is allowed to macerate for a specified time, in a warm place. It is then to be heated (as directed in the formula) for a certain length of time and the percolation then begun and continued until the drug is exhausted, or until the required amount of percolate is obtained.

The same general directions for packing the percolator, keeping the drug covered with the menstruum, regulating the flow of the percolate, etc., as are specified in the official process, should be observed.

In the formulæ contained in this book for making preparations by water-bath percolation it is directed after packing in the percolator and adding menstruum to the drug, to "set in a warm place" for a certain length of time to macerate; by this it is meant that the percolator and its contents should be heated from  $30^{\circ}$  to  $35^{\circ}$  C. ( $86^{\circ}$  to  $95^{\circ}$  F.) by any convenient means. In summer a warm place in the store will suffice, in winter a shelf by the stove or other heating apparatus will do; or, a box with a hinged door and holes in the bottom about the size of the bottom of the percolators, may be fastened to the side of the wall and the heat may be maintained by a coal oil lamp placed beneath the percolator.

In large establishments warming closets heated by steam pipes or other means may be arranged. It is not absolutely necessary that heat should be maintained during maceration, but better results will follow if it is.

The direction in the formulæ "heat very moderately" means that the temperature should not be higher than from  $40^{\circ}$  to  $45^{\circ}$  C. ( $104^{\circ}$  to  $113^{\circ}$  F.); "heat moderately" means that the temperature should not exceed  $60^{\circ}$  to  $65^{\circ}$  C. ( $140^{\circ}$  to  $149^{\circ}$  F.)—a higher temperature than this is seldom necessary.

After the percolation is concluded, if sufficient Alcohol is retained in the drug to be of value, it may be recovered by distillation. The amount of alcohol or other menstruum retained varies with the nature of the drug, from one-fourth to more than its entire original weight. In making any con-

siderable quantity of a preparation, it is important to save this menstruum, which would otherwise be wasted, by distillation, as stated, in the article on distillation.

### WASHING PRECIPITATES.

The object of washing fresh precipitates is to free them from soluble salts, or other substances with which they are associated, which are soluble in water.

The usual manner of washing fresh precipitates, in a small way, is to pour them upon a wet muslin strainer and filter water through them until the soluble matter has all been washed out.

This method is open to several objections: 1st, exposure to the atmosphere, which rapidly oxidizes many salts, especially the iron salts, rendering them insoluble; 2d, waste, as considerable of the precipitate is washed away by this method; 3d, inconvenience, as it requires the continued attention of the operator.

Another method is to wash the precipitate in a large jar or earthenware crock, by pouring upon it a quantity of water and stirring thoroughly, then allowing the precipitate to settle, drawing off the supernatant fluid with a syphon, pouring on more fresh water and thus continuing until the soluble matter is washed out; and then draining the precipitate upon a muslin strainer.

The best method, however, is to make the precipitate in a tall jar or crock, filled full of water; then, having fastened a piece of rubber tubing to each end of a stick, insert it in the jar in such a manner that a stream of water passing through one rubber tube will reach to the bottom of the vessel, while the water at the top of the jar will be carried off by means of the other tube, which acts as a syphon. The water to wash the precipitate can be supplied from a water-pipe, or from a bucket set above the washing apparatus, into which the tube is inserted as a syphon.

It will be seen that by this means the precipitate is continually washed, and that it is not exposed, nor wasted, as only clear water is drawn off at the top of the jar, because, the precipitate has time to settle away from the surface of the water where the waste tube is attached. Precipitates are rapidly and thoroughly washed by this method.

## PART III.

### WORKING FORMULÆ.

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In presenting the Working Formulæ which follow to the consideration of American Pharmacists it is only necessary to state that they have been compiled and written for the purpose of making clearer the difference between the former and the present standard—the Pharmacopœia—and also for introducing new and improved formulæ and methods.

Druggists who are unaccustomed to making their liquid preparations by parts and weight, as the new Pharmacopœia directs, find the present formulæ quite annoying, and often throw the authority aside, because it is too much trouble to “figure it out.” In the formulæ which follow, therefore, the old method of definite weight and measure, with which druggists are most familiar, is generally retained, and, as comparisons are usually made for the same quantity of finished preparation, the druggist may see at a glance the exact difference between the former and the present standard. The convenience of having both the former and the present formulæ together for comparison or use, cannot but be appreciated by druggists; for it will be many years before the preparations of the new revision are all adopted, and those of the old discarded; and constant reference to both standards will be required.

In regard to the departure from officinal methods and formulæ which appear in many preparations, it may be stated, that no changes have been made, nor new features introduced which have not been proven, by repeated trials, superior to the processes or formulæ of the Pharmacopœia; and, as it is the privilege of every pharmacist to make his preparations in the most convenient, serviceable, and economical way, provided the standard of strength is maintained, no apology is offered for their introduction.

The formulæ which are given represent the working formulæ of both the 1870 and 1880 Pharmacopœias, as well as a large number for similar preparations not officinal.

Particular attention is directed to the formulæ for making preparations by water-bath percolation, for, although the process is yet in its infancy, it is of sturdy growth, and bids fair to supersede all other methods for exhausting drugs. The principle of applying heat, to assist in dissolving the medicinal properties of drugs, is certainly correct, and the process of water-bath percolation, which is the application of this principle, is entitled to careful consideration, and trial.

In converting the parts by weight of the new Pharmacopœia into definite weight and fluid measure, though they may not all be absolutely correct to a fraction, they are sufficiently so for all purposes required, and the formulæ which follow may be relied upon as correct interpretation of the Pharmacopœia formulæ, and as presenting the most approved methods for making preparations now known to Pharmacy.

## ABSTRACTA—ABSTRACTS.

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These preparations are first introduced in the present (6th decennial) revision of the Pharmacopœia. They represent in one part of the abstract the medicinal value of two parts of the powdered drug, and are intended to take the place, as official preparations, of the unofficial, so called, "powdered extracts" now made by many manufacturers, and considerably used and prescribed by physicians. Solid extracts are the most variable and uncertain of all the galenicals, and it must be considered an advantage to pharmacy to have preparations of a known and standard ratio to the drug, to use in their place. It may be questioned, however, how much the few abstracts of the present revision will contribute to that end, as they are so much diluted by the sugar of milk, that it renders their use in pills inadmissible generally, on account of the bulk; and, as they represent only *double* the powdered drug, the drug itself may as well be prescribed in powders, etc., with much saving in time and money. It is much to be regretted that the committee did not give us these preparations much less diluted, which they might readily have done, as the menstruum is mostly alcohol and the amount of solid extract obtained is small.

If, instead of these abstracts, the committee of revision had given us a series of formulæ for making a class of preparations which would contain the active principles of the drugs which they represent—say 10 parts of the drug in one part of the finished product, they would have conferred a lasting service. This might readily be done by precipitating the active principles from the extract made from a given quantity of drug and then combining with sugar of milk to make the required weight.

The Pharmacopœia process for abstracts, is in substance as follows :

Exhaust 200 parts of the drug, by percolating with sufficient menstruum, reserving the first 170 parts that pass; evaporate the remaining percolate to 30 parts, adding it to the portion reserved; then add 50 parts sugar of milk; allow to evaporate slowly to dryness; powder and add enough sugar of milk to make 100 parts.

The quantitative formulæ are as follows :

ABSTRACTUM ACONITI. <i>Abstract of Aconite.</i>	{ Aconite (root), 200 parts. Tartaric Acid, 2 parts. Alcohol, Sugar of Milk, each sufficient to make 100 parts.
ABSTRACTUM BELLADONNÆ. <i>Abstract of Belladonna.</i>	{ Belladonna (root), 200 parts. Alcohol, Sugar of Milk, each sufficient to make 100 parts.
ABSTRACTUM CONII. <i>Abstract of Conium.</i>	{ Conium (fruit), 200 parts. Diluted Hydrochloric Acid, 6 parts. Alcohol, Sugar of Milk, each sufficient to make 100 parts.
ABSTRACTUM DIGITALIS. <i>Abstract of Digitalis.</i>	{ Digitalis (leaves), 200 parts. Alcohol, Sugar of Milk, each sufficient to make 100 parts.
ABSTRACTUM HYOSCYAMI. <i>Abstract of Hyoscyamus.</i>	{ Hyoscyamus (leaves), 200 parts. Alcohol, Sugar of Milk, each sufficient to make 100 parts.
ABSTRACTUM IGNATIÆ. <i>Abstract of Ignatia.</i>	{ Ignatia (seed or bean), 200 parts. Alcohol 8, to Water 1 part, Sugar of Milk, each sufficient to make 100 parts.
ABSTRACTUM JALAPÆ. <i>Abstract of Jalap.</i>	{ Jalap (root or tuber), 200 parts. Alcohol, Sugar of Milk, each sufficient to make 100 parts.
ABSTRACTUM NUCIS VOMICÆ. <i>Abstract of Nux Vomica.</i>	{ Nux Vomica (seed), 200 parts. Alcohol 8, to Water 1 part, Sugar of Milk, each sufficient to make 100 parts.
ABSTRACTUM PODOPHYLLI. <i>Abstract of Podophyllum.</i>	{ Podophyllum (root), 200 parts. Alcohol, Sugar of Milk, each sufficient to make 100 parts.
ABSTRACTUM SENEGÆ. <i>Abstract of Senega.</i>	{ Senega (root), 200 parts. Alcohol, Sugar of Milk, each sufficient to make 100 parts.
ABSTRACTUM VALERIANÆ. <i>Abstract of Valerian.</i>	{ Valerian (root), 200 parts. Alcohol, Sugar of Milk, each sufficient to make 100 parts.



## ABSTRACTS, BY WATER-BATH PERCOLATION.

## Fenner's Working Formulæ.

It is obvious that drugs from which abstracts are to be made may be much more readily and economically exhausted by water-bath percolation than by the cold process — much less menstruum being required to exhaust the drug, and the result much more perfectly representing the active medicinal agents. The following formulæ, which correspond with the official strength, but differ in manner of making, are therefore presented.

Abstracts of other drugs may be made in the same general manner :

## ABSTRACT OF ACONITE.

Aconite (root), No. 60 powder,	16 ounces.
Tartaric Acid,	75 grains.
Alcohol,	
Sugar of Milk, in fine powder, each sufficient to make	8 ounces.

Moisten the drug with 6 ounces of alcohol, and pack very firmly in the water-bath percolator. Pour upon it 10 ounces of alcohol and set in a warm place for three days ; then heat moderately [to about 60° C. (140° F.)], and after one hour begin to percolate, adding alcohol to the drug, and continuing the heat until 12 ounces have passed, which reserve. Continue the percolation until the drug is exhausted (or until about 12 ounces more have passed). Evaporate this last percolate by distillation to about 3 ounces, and add to the portion previously reserved. Dissolve the acid in the liquid, add 4 ounces of powdered sugar of milk, and set aside in a moderately warm place [not over 50° C. (122° F.)] in an evaporating dish covered with gauze. Let remain until evaporated to dryness, then powder, weigh, and add enough powdered sugar of milk to make 8 ounces.

The alcohol remaining in the drug after percolation may be recovered by distillation.



## ABSTRACT OF BELLADONNA.

Belladonna (root), No. 60 powder,	16 ounces.
Alcohol,	
Sugar of Milk, in fine powder, each sufficient to make	8 ounces.

Moisten the drug with 6 ounces of alcohol, and pack firmly in the water-bath percolator. Pour upon it 10 ounces of alcohol and set in a warm place for two days; then heat moderately [to about 60° C. (140° F.)], and after one hour begin to percolate, adding alcohol, and continuing the heat until 12 ounces have passed, which reserve. Continue the percolation until 12 ounces more have passed, which evaporate by distillation to about 3 ounces, and add to the portion previously reserved. To this add 4 ounces sugar of milk, and set aside in a moderately warm place [not over 50° C. (122° F.)] in an evaporating dish covered with gauze. Let remain until evaporated to dryness, then powder, weigh, and add enough powdered sugar of milk to make 8 ounces.

The alcohol remaining in the drug after percolation may be recovered by distillation.

## ABSTRACT OF CONIUM.

Conium (fruit), No. 40 powder,	16 ounces.
Diluted Hydrochloric Acid,	$\frac{1}{2}$ ounce.
Alcohol,	
Sugar of Milk, in fine powder, each sufficient to make	8 ounces.

Moisten the drug with 6 ounces of alcohol, and pack firmly in the water-bath percolator. Pour upon it 10 ounces of alcohol and set in a warm place for two days; then heat moderately [to about 60° C. (140° F.)], and after an hour begin to percolate, adding alcohol to the drug, and continuing the heat until 12 ounces have passed, which reserve. Continue the percolation until 10 ounces more have passed, which evaporate by distillation to about 3 ounces, and add to the portion previously reserved. To this add 4 ounces sugar of milk and the diluted hydrochloric acid, and set aside in a moderately warm place [not over 50° C. (122° F.)] in an evaporating dish covered with gauze. Let remain

until evaporated to dryness, then powder, weigh, and add enough powdered sugar of milk to make 8 ounces.

The alcohol remaining in the drug after percolation may be recovered by distillation.

### ABSTRACT OF DIGITALIS.

Digitalis (leaves), No. 60 powder,	16 ounces.
Alcohol,	
Sugar of Milk, in fine powder, each sufficient to make	

Moisten the drug with 6 ounces of alcohol, and pack very firmly in the water-bath percolator. Pour upon it 10 ounces of alcohol, and set in a warm place for two days; then heat moderately [to about  $60^{\circ}$  C. ( $140^{\circ}$  F.)], and after an hour begin to percolate, adding alcohol to the drug, and continuing the heat until 12 ounces have passed, which reserve. Continue the percolation until 12 ounces more have passed, which evaporate by distillation to about 3 ounces, and add to the portion before reserved. To this add 4 ounces of sugar of milk and set aside in a warm place [not over  $50^{\circ}$  C. ( $122^{\circ}$  F.)] in an evaporating dish covered with gauze. Let remain until evaporated to dryness, then powder, weigh, and add enough powdered sugar of milk to make 8 ounces.

The alcohol remaining in the drug after percolation may be recovered by distillation.

### ABSTRACT OF HYOSCYAMUS.

Hyoscyamus (leaves), No. 60 powder,	16 ounces.
Alcohol,	
Sugar of Milk, in fine powder, each sufficient to make	8 ounces.

Moisten the drug with 6 ounces of alcohol, and pack very firmly in the water-bath percolator. Pour upon it 10 ounces of alcohol, and set in a warm place for two days; then heat moderately [to about  $60^{\circ}$  C. ( $140^{\circ}$  F.)], and after one hour begin to percolate, adding alcohol to the drug, and continuing the heat until 12 ounces have passed, which reserve. Continue the percolation until 12 ounces more have passed, which evaporate by distillation to about 3 ounces, and add to the portion previously reserved. To this add 4 ounces sugar of milk and set aside in a warm place [not over  $50^{\circ}$  C. ( $122^{\circ}$  F.)] in an evaporating dish

covered with gauze. Let remain until evaporated to dryness, then powder, weigh, and add enough powdered sugar of milk to make 8 ounces.

The alcohol remaining in the drug after percolation may be recovered by distillation.

### ABSTRACT OF IGNATIA.

Ignatia (bean or seed), No. 60 powder,	16 ounces.
Alcohol,	
Water,	
Sugar of Milk in fine powder, each sufficient	
to make	8 ounces.

Mix the alcohol and water in the proportion of 8 parts of alcohol to 1 part of water and moisten the drug with 6 ounces of the mixture. Pack firmly in the water-bath percolator and pour upon it 10 ounces of the mixture, set in a warm place for three days; then heat moderately [to about 60° C. 140° F.)], and after one hour begin to percolate, adding the mixture of alcohol and water to the drug and continuing the heat until 13 ounces have passed, which reserve. Continue the percolation until 20 ounces more have passed, which evaporate by distillation to about 3 ounces and add to the portion previously reserved. To this add 4 ounces sugar of milk and set aside in a warm place [not over 50° C. (122° F.)] in an evaporating dish covered with gauze. Let remain until evaporated to dryness; then powder, weigh, and add enough powdered sugar of milk to make 8 ounces.

The alcohol remaining in the drug after percolation may be recovered by distillation.

### ABSTRACT OF JALAP.

Jalap (root or tuber), No. 40 powder,	16 ounces.
Alcohol,	
Sugar of Milk, in fine powder, each sufficient	
to make	8 ounces.

Moisten the drug with 8 ounces of alcohol and pack firmly in the water-bath percolator. Pour upon it 8 ounces of alcohol and set in a warm place for two days; then heat moderately [to about 60° C. (140° F.)], and after one hour begin to percolate, adding alcohol to the drug and continuing the heat until 13 ounces have passed, which reserve.

Continue the percolation until a pint more has passed, which evaporate by distillation to about 3 ounces and add to the portion previously reserved. To this add 4 ounces of sugar of milk and set aside in a warm place [not over 50° C. (122° F.)] in an evaporating dish covered with gauze. Let remain until evaporated to dryness, then powder, weigh, and add enough powdered sugar of milk to make 8 ounces.

The alcohol remaining in the drug after percolation may be recovered by distillation.

#### ABSTRACT OF NUX VOMICA.

Nux Vomica (seeds), No. 60 powder,	16 ounces.
Alcohol,	
Water,	
Sugar of Milk, in fine powder, each sufficient to make	8 ounces.

Mix alcohol and water in the proportion of 8 parts of alcohol to 1 part of water and moisten the drug with 8 ounces of the mixture. Pack firmly in the water-bath percolator and pour upon it 8 ounces of the mixture. Set in a warm place for three days; then heat moderately [to about 60° C. (140° F.)], and after one hour begin to percolate, adding the mixture of alcohol and water to the drug and continuing the heat until 13 ounces have passed, which reserve, continue the percolation until 20 ounces more have passed, which evaporate by distillation to about 3 ounces, and add to the portion previously reserved. To this add 4 ounces sugar of milk and set aside in a warm place [not over 50° C. (122° F.)] in an evaporating dish covered with gauze. Let remain until evaporated to dryness; then powder, weigh, and add enough powdered sugar of milk to make 8 ounces.

The alcohol remaining in the drug after percolation may be recovered by distillation.

#### ABSTRACT OF PODOPHYLLUM.

Podophyllum (Mandrake Root), No. 60 powder,	16 ounces.
Alcohol,	
Sugar of Milk in fine powder, each sufficient to make	8 ounces.

Moisten the drug with 6 ounces alcohol and pack firmly in the water-bath percolator. Pour upon it 10 ounces of

alcohol and set in a warm place for two days; then heat moderately [to about  $60^{\circ}$  C. ( $140^{\circ}$  F.)], and after one hour begin to percolate, adding alcohol to the drug and continuing the heat until 13 ounces have passed, which reserve. Continue the percolation until 12 ounces more have passed, which evaporate by distillation to about 3 ounces and add to the portion previously reserved. To this add 4 ounces sugar of milk and set aside in a warm place [not over  $50^{\circ}$  C. ( $122^{\circ}$  F.)] in an evaporating dish covered with gauze. Let remain until evaporated to dryness, then powder, weigh and add enough powdered sugar of milk to make 8 ounces.

The alcohol remaining in the drug after percolation may be recovered by distillation.

### ABSTRACT OF SENECA.

Senega (root), No. 60 powder,	16 ounces.
Alcohol,	
Sugar of Milk, in fine powder, each sufficient	
to make	8 ounces.

Moisten the drug with 6 ounces alcohol and pack firmly in the water-bath percolator. Pour upon it 10 ounces of alcohol and set in a warm place for two days; then heat moderately [to about  $60^{\circ}$  C. ( $140^{\circ}$  F.)], and after one hour begin to percolate, adding alcohol to the drug and continuing the heat until 13 ounces have passed, which reserve. Continue the percolation until 12 ounces more have passed, which evaporate by distillation to about 3 ounces, and add to the portion previously reserved. To this add 4 ounces sugar of milk and set in a warm place [not over  $50^{\circ}$  C. ( $122^{\circ}$  F.)] in an evaporating dish covered with gauze. Let remain until evaporated to dryness, then powder, weigh, and add enough powdered sugar of milk to make 8 ounces.

The alcohol remaining in the drug after percolating may be recovered by distillation.

### ABSTRACT OF VALERIAN.

Valerian (root), No. 60 powder,	16 ounces.
Alcohol,	
Sugar of Milk, in fine powder, each sufficient	
to make	8 ounces.

Moisten the drug with 6 ounces alcohol, and pack firmly in the water-bath percolator. Pour upon it 10 ounces of

alcohol, and set in a warm place for two days; then heat moderately [to about  $60^{\circ}$  C. ( $140^{\circ}$  F.)], and after one hour begin to percolate, adding alcohol to the drug, and continuing the heat until 13 ounces have passed, which reserve. Continue the percolation until 12 ounces more have passed, which evaporate by distillation to about 3 ounces and add to the portion previously reserved. To this add 4 ounces of sugar of milk and set aside in a warm place [not over  $50^{\circ}$  C. ( $122^{\circ}$  F.)] in an evaporating dish covered with gauze. Let remain until evaporated to dryness, powder, weigh, and add enough powdered sugar of milk to make 8 ounces.

The alcohol remaining in the drug after percolation may be recovered by distillation.

### ACETA—VINEGARS.

The Diluted Acetic Acid of the new Pharmacopœia being a third stronger than the old standard, makes a corresponding increase in the acid strength of all the Vinegars. The formulæ have all been changed in the new revision to a uniform ratio of 10 per cent. of the drug.

The most noticeable change is in the Vinegar of Opium. The changes in percentage of medicinal strength are as follows:

	PERCENTAGE OF STRENGTH.	
	1870.	1880.
Acetum Lobeliæ,	13	10
Acetum Opii,	16.3	10
Acetum Sanguinaræ,	13	10
Acetum Scillæ,	13	10

Acetum and Acetum Destillatum, which were official in the 1870 Pharmacopœia, are omitted in the present revision.

The following are the old and new standards compared in definite quantities:

#### ACETUM LOBELIÆ.

##### *Vinegar of Lobelia.*

	1870.	1880.
Lobelia (herb), No. 30 powder,	960 grains.	729 grains.
Diluted Acetic Acid, enough to make	a pint.	a pint.
Percolate.		

## ACETUM OPII.

*Vinegar of Opium.*

	1870.	1880.
Opium, powdered,	1200 grains.	729 grains.
Nutmeg, powdered,	240 “	218 “
Sugar,	1920 “	1458 “
Diluted Acetic Acid, enough to make	a pint.	a pint.

Macerate 24 hours, then percolate.

Remark: The important change in the Opium strength of this preparation should be well understood. See the article on Opium.

## ACETUM SANGUINARIÆ.

*Vinegar of Bloodroot.*

	1870.	1880.
Sanguinaria (Bloodroot), No. 30 powder,	960 grains.	729 grains.
Diluted Acetic Acid, enough to make	a pint.	a pint.
Percolate.		

## ACETUM SCILLÆ.

*Vinegar of Squill.*

	1870.	1880.
Squill, No. 30 powder,	960 grains.	729 grains.
Diluted Acetic Acid, enough to make	a pint.	a pint.

Macerate 24 hours with 6 ounces of the Dilute Acid, then percolate.

## ACIDA — ACIDS.

The diluted Acids and Acid preparations usually prepared by druggists are all more or less changed in the new revision. An attempt is made to introduce a uniformity of 10 per cent. *absolute* acid strength in the dilute mineral acids. The percentage of *absolute* acid must not be confounded with the real quantity of C. P. Acid used. Only the chemically pure acids are to be used in making the diluted acids.



The following table shows the changes in specific gravity and percentage of absolute acid contained in the preparations as made by the old and the new standards :

### ACIDS AND ACID PREPARATIONS.

	SPECIFIC GRAVITY.		PERCENTAGE OF ABSOLUTE ACID.	
	1870	1880	1870	1880
Acetic Acid . . . . .	1.047	1.048	35.	36.
Acetic Acid, Diluted . . . . .	1.006	1.0083	4.5	6
Acetic Acid, Glaciale . . . . .	. . .	1.057	. . .	99
Hydrobromic Acid, Diluted . . . . .	. . .	1.077	. . .	10.
Hydrochloric (muriatic) Acid. . . . .	1.160	1.160	31.9	31.9
Hydrochloric (muriatic) Acid Diluted . . . . .	1.038	1.049	7.8	10.
Hydrocyanic Acid, Diluted . . . . .	0.997	0.997	2.	2.
Lactic Acid . . . . .	1.212	1.212	75.	75.
Nitric Acid . . . . .	1.420	1.420	69.4	69.4
Nitric Acid, Diluted . . . . .	1.068	1.059	11.6	9.9
Nitrohydrochloric Acid . . . . .	1.257	1.215	46.	39.8
Nitrohydrochloric Acid Diluted . . . . .	1.063	1.043	12.1	8.3
Oleic Acid. . . . .	. . .	0.800	. . .	. . .
Phosphoric Acid . . . . .	. . .	1.347	. . .	50.
Phosphoric Acid, Diluted . . . . .	1.056	1.057	9.8	10.
Sulphuric Acid. . . . .	1.843	1.840	100.	96.
Sulphuric Acid, Diluted . . . . .	1.082	1.067	12.1	10.
Sulphuric Acid, Aromatic . . . . .	0.927	0.955	13.8	20.
Sulphurous Acid . . . . .	1.035	1.022	6.4	3.5

The following Acids are added or omitted in the new revision (1880):

ADDED.  
 Acidum Aceticum Glaciale,  
 Acidum Boricum,  
 Acidum Hydrobromicum,  
 Acidum Oleicum,  
 Acidum Phosphoricum,  
 Acidum Salicylicum.

OMITTED.  
 Acidum Oxalicum,  
 Acidum Phosphoricum Glaciale.  
 Acidum Valerianicum.

The following formulæ represent the old and the new standards compared in definite quantities :

### ACIDUM ACETICUM DILUTUM.

#### *Diluted Acetic Acid.*

	1870.	1880.
Acetic Acid, by weight,	919 grains.	1250 grains.
Distilled water, enough to make	a pint.	a pint.
Mix.		



## ACIDUM HYDROCLORICUM DILUTUM.

*Diluted Hydrochloric (Muriatic) Acid.*

	1870.	1880.
Hydrochloric Acid, by weight,	1920 grains	2415 grains.
Distilled water, enough to make	a pint.	a pint.
Mix.		

## ACIDUM HYDROCYANICUM DILUTUM.

*Diluted Hydrocyanic Acid.*

The only difference of note in this preparation is that the 1880 Pharmacopœia directs the distilled Hydrocyanic Acid to be condensed in a receiver containing diluted alcohol instead of water. This makes the preparation, as made by the new Pharmacopœia, contain about 30 per cent. of alcohol in place of water contained in the old formula. This is a valuable addition, as it prevents the decomposition so often noticed in the dilute acid.

## ACIDUM NITRICUM DILUTUM.

*Diluted Nitric Acid.*

	1870.	1880.
Nitric Acid, by weight,	1440 grains	1103 grains.
Distilled water, enough to make	a pint.	a pint.
Mix.		

## ACIDUM NITROHYDROCHLORICUM.

*Nitrohydrochloric (Nitromuriatic) Acid.*

	1870.	1880.
Nitric Acid, by weight,	3 ounces.	1 $\frac{1}{3}$ ounces.
Hydrochloric Acid, by weight,	5 ounces.	5 ounces.

Mix in a graduate of at least double the capacity of the preparation. This should be made several days before using to give the acids time to combine thoroughly.

## ACIDUM NITROHYDROCHLORICUM DILUTUM.

*Diluted Nitrohydrochloric (Nitromuriatic) Acid.*

	1870.	1880.
Nitric Acid, by weight,	720 grains.	320 grains.
Hydrochloric Acid, by weight,	1200 grains.	1200 grains.
Distilled water, enough to make	a pint.	a pint.

Mix the acids in a large graduate, and when effervescence has ceased add the water.

## ACIDUM PHOSPHORICUM.

*Phosphoric Acid.*

This acid, in this form, is first made official in the new Pharmacopœia. It is a liquid of the consistency of a thick syrup, containing 50 per cent. of Orthophosphoric Acid. It is five times the strength of Diluted Phosphoric Acid, and is made in the same manner that Diluted Phosphoric Acid has formerly been prepared, viz.: by the oxidization of Phosphorus by Nitric Acid. On account of the care required, and the risk attending its preparation, it will be made but by few druggists. Those who wish to make it are referred to the working formula in the new Pharmacopœia. It is but little used as it is, but is mostly employed for making Diluted Phosphoric Acid.

## ACIDUM PHOSPHORICUM DILUTUM.

*Diluted Phosphoric Acid.*

The 1880 Pharmacopœia directs this preparation to be made by mixing

Phosphoric Acid, as above, by weight,	2 parts.
Distilled water, by weight,	8 parts.

The formula for a pint of the Diluted Phosphoric Acid would therefore be

	1880.
Phosphoric Acid, as above, by weight,	1541 grains.
Distilled water, enough to make	a pint.

Mix.

The 1870 Pharmacopœia directs it to be prepared from Phosphorus, Nitric Acid and water. The resulting preparation differs only in the percentage of Orthophosphoric Acid, which is 9.8 per cent. in the 1870, and 10 per cent. in the 1880 revision.

The most economical way for the mass of druggists is to buy the 50 per cent. Solution of some reliable manufacturer and dilute it as desired for the Dilute Acid.

## ACIDUM SULPHURICUM DILUTUM.

*Diluted Sulphuric Acid.*

	1870.	1880.
Sulphuric Acid, by weight,	960 grains.	779 grains.
Distilled water, enough to make	a pint.	a pint.

Mix by adding the acid gradually to the water.

## ACIDUM SULPHURICUM AROMATICUM.

*Aromatic Sulphuric Acid.*

This preparation is considerably changed in the new Pharmacopœia—not only as to the quantity of acid it contains, but in color and composition. The 1870 formula contains about 14 per cent. of Sulphuric Acid, while the 1880 formula contains about 20 per cent. A comparison of the two formulas below will show the difference in composition :

	1870.
Sulphuric Acid, by weight,	1305 grains.
Ginger,	203 grains.
Cinnamon,	327 grains.
Alcohol, sufficient to make	a pint.

Percolate the ginger and cinnamon with alcohol until 8 ounces have passed. Add the acid slowly to 6 ounces of alcohol; then mix the acid solution with the tincture and add enough alcohol to the mixture to make a pint.

	1880.
Sulphuric Acid, by weight,	1392 grains.
Tincture of Ginger,	378 minims.
Oil of Cinnamon,	7 minims.
Alcohol, sufficient to make	a pint.

Add the acid slowly to 8 ounces of alcohol; then add the tincture and oil and enough alcohol to make the measure a pint.

This is lighter colored and less aromatic than the old preparation.

## ACIDUM SULPHUROSUM.

*Sulphurous Acid.*

The articles required to make this preparation are compared as follows. For the working formulæ see the U. S. P.:

	1870.	1880.
Sulphuric Acid,	8 troyounces.	7 parts by weight.
Charcoal,	1 troyounce.	1 part by weight.
Distilled water,	36 fluidounces.	50 parts by weight.

## ADEPS BENZOINATUS.

*Benzoinated Lard.*

(Unguentum Benzoini, U. S., 1870).

1870.

Tincture Benzoin,	2 fluidrachms.
Lard,	16 troyounces.

1880.

Benzoin in coarse powder,	2 parts.
Lard,	100 parts.

The difference between this preparation as made by the 1870 and 1880 formulæ is, that the 1880 is less odorous of the Benzoin, while it is claimed that the irritation, which was produced on certain skin diseases by using the 1870 preparation, is avoided by the later method. It is, however, of but little consequence; for since the introduction of Petrolatum (Cosmoline or Vaseline), although it is not officially directed as an ointment base, yet it has proven itself so much superior to Lard in *any* form as a non-oxidizing base, that Lard has almost ceased to be used by druggists. Let it be consigned to the kitchen and the cook, instead of the laboratory and the ointment pot.

Benzoinated Cosmoline may be made with Cosmoline, 14 ounces; Yellow Wax, 2 ounces; Benzoin,  $\frac{1}{4}$  ounce. Melt and simmer for an hour.

*Acetic Æther* is made official in the 1880 revision.

*Aconitia* and *Aconite Leaves* are omitted in the 1880 revision. Why *Aconite Leaves* should be deleted, and some much less used drugs introduced, is not apparent.

## ALCOHOL.

*Alcohol U. S. (Rectified Spirit Br.).*

	1870.	1880.
Specific gravity at 15.6° C. (60° F.),	0.835	0.820
Percentage of Ethyl alcohol by weight,	.85	.91
“ “ “ volume,	.90	.94
“ “ water by weight,	.15	.9
“ “ by volume,	.10	.6
Boiling point,	78°C. (172.4°F.)	

*Rectified Spirit* of the British Pharmacopœia nearly corresponds with the alcohol of the 1870 U. S. P., being of

sp. gr. 0.838 and containing 16 per cent. of water by weight. To convert the U. S. 1880, or commercial alcohol, into the Rectified Spirit of the British standard, add 1 fluidounce of water to a pint (American measure) of alcohol. This should be observed and taken into consideration when working British formulæ, and the alcohol should be thus prepared.

The *Stronger Alcohol* of the 1870 Pharmacopœia, sp. gr. 0.817, has been omitted in the present revision.

*Absolute Alcohol* has the sp. gr. 0.796, and the empirical formula  $C_2H_6O$ .

As ALCOHOL is, so to speak, the druggists' "right bower," too much information cannot be gained in regard to it.

It is known in chemistry as Ethyl Hydrate, and has the chemical formula  $C_2H_5HO$ ; 46. It is composed of

Carbon,	52.67	parts	by	weight.
Hydrogen,	12.90	"	"	"
Oxygen,	34.43	"	"	"
<hr/>				
100				

A comparison of the 1870 and 1880 standards shows quite a difference in the strength of "Alcohol" of the different revisions. It may be here remarked, however, that the alcohol of *commerce* is the same now as it has been for the past ten years, viz.: 188 proof, or very nearly 94 per cent. of Ethyl Alcohol by volume, which corresponds with the present (1880) Pharmacopœial strength. Most all druggists use Alcohol as they buy it, when Alcohol is directed, and the greater share of them did not know, or at least did not take into consideration, the difference in the *Alcohol* and the *Stronger Alcohol* of the 1870 Pharmacopœia and the commercial, and have, therefore, for the past ten years been using alcohol of higher or lower proof than their 1870 Pharmacopœia directed. It is a great improvement to have the Pharmacopœial standard of strength correspond with the commercial, as it now does.

*Spirit of Wine* is another name for Alcohol, although, strictly speaking, it applies to the French Cologne Spirit.

*High Wine* is another name for Alcohol, frequently used in formulæ. *Cologne Spirit* is deodorized Alcohol.

When Alcohol and water are mixed a slight contraction of volume occurs, with a rise in temperature; when 52.6 volumes of Alcohol are mixed with 47.4 of water, the decrease in volume is greatest, being 3.4 per cent.

The change in the U. S. P. of 1880 to parts by weight, instead of fluid measure, makes it necessary to thoroughly understand the relation between the weight and measure of alcohol. It is clearly shown in the following tables:

Table of measure, with weight equivalents of ALCOHOL, sp. gr. 0.820 at 15.6° C. (60° F.)\*

FLUID MEASURE.	IN TROY GRAINS.	IN TROY OUNCES.	IN AVOIR. OUNCES.	IN METRIC GRAMMES.
AMERICAN (APOTHECARY)				
<i>Fluid Measure.</i>				
1 Minim weighs . . . .	0.78	0.0016	0.0018	0.0505
1 Fluid drachm weighs . .	46.7	0.097	0.107	3.029
1 Fluid ounce weighs . .	373.7	0.779	0.854	24.230
1 pint (16 fl. ounces) weighs	5978.8	12.462	13.674	387.680
BRITISH (IMPERIAL).				
<i>Fluid Measure.</i>				
1 Minim weighs . . . .	0.77	0.0015	0.0017	0.0484
1 Fluid drachm weighs . .	44.8	0.093	0.102	2.908
1 Fluid ounce weighs . .	358.7	0.748	0.820	23.246
1 Pint (20 fl. ounces) weighs	7175.0	14.948	16.400	4649.378
METRIC FLUID MEASURE.				
1 Cubic Centimetre weighs	12.4	0.026	0.028	0.807
1 Litre weighs . . . .	12455.0	25.949	28.554	807.126

\*Alcohol increases or decreases in volume, about  $\frac{1}{1350}$  for each Fahrenheit degree of temperature.

Table of weight, with measure equivalents of ALCOHOL sp. gr. 0.820 at 15.6° C. (60° F.).

WEIGHT.	IN AMERI- CAN MIN- IMS.	AMERICAN (APOTHE- CARY) FL. OUNCES.	BRITISH (IMPER'L) FLUID OUNCES.	METRIC CUBIC CEN- TIMETRES.
APOTHECARY WEIGHT.				
1 Grain measures . . . .	1.28	0.0027	0.0028	0.0812
1 Drachm measures . . . .	77.1	0.160	0.167	4.899
1 Ounce (troy) measures . .	616.6	1.284	1.340	39.194
AVOIRDUPOIS WEIGHT.				
1 Ounce measures . . . .	562.0	1.171	1.219	35.112
1 Pound (16 oz.) measures	89 92.0	18.832	19.512	561.792
METRIC WEIGHT.				
1 Gramme measures . . . .	19.8	0.0421	0.0428	1.242

In working British formulas do not forget the relation of the Imperial to Apothecary measure.

1 Imperial Fluidrachm equals 57 American Minims.

1 " Fluidounce " 460 " "  
or 0.96 American fluid ounce.

1 Imperial Pint equals  $19\frac{1}{2}$  American Fluidounces.

These equivalents would not be here repeated, but for the frequent use of alcohol and diluted alcohol in preparing British Formulæ.

### ALCOHOL DILUTUM.

*Diluted Alcohol, U. S. (Spiritus Tenuor Br., Proof Spirit, P. G.)*

	1870.	1880.
Specific gravity at 15.6° C. (60° F.)	0.941	0.928
Percentage of Ethyl Alcohol by weight,	39.3	45.5
" " " " volume,	46.6	53.
" of water by weight,	60.7	54.5
" " " " volume,	53.4	47.

### FORMULA.

U. S. 1870.

Alcohol, sp. gr. 0.835 } Equal parts } a pint.  
Distilled water, { by measure. } a pint.

Mix.

U. S. 1880.

Alcohol, sp. gr. 0.820 } Equal parts } 17 fluidounces.  
Distilled water, { by weight. } 14 fluidounces.

Mix.

### BRITISH PHARMACOPŒIA.

Rectified Spirit, sp. gr. 0.838, 5 pints.  
Distilled water, 3 pints.

Mix—sp. gr. 0.920.—The Rectified Spirit must first be prepared by mixing 16 parts by measure, of Alcohol, with 1 part of water.

A comparison of the 1870 with the 1880 standard shows the present Diluted Alcohol to be about 13 per cent. stronger than the former.

The following tables show the relation of weight and measure of Diluted Alcohol, which the present revision of the U. S. Pharmacopœia makes it necessary to thoroughly understand. The tables are calculated with Diluted Alco-



hol of the 1880 U. S. P., equal parts, *by weight*, of alcohol and water :

Table of measure, with weight equivalents of DILUTED ALCOHOL, sp. gr. 0.928 at 15.6° C. (60° F.)\*

FLUID MEASURE.	IN TROY GRAINS.	IN TROY OUNCES.	IN AVOIR. OUNCES.	IN METRIC GRAMMES.
AMERICAN (APOTHECARY)				
<i>Fluid Measure.</i>				
1 Minim weighs . . . .	0.88	0.0018	0.0020	0.0571
1 Fluid drachm weighs .	52.8	0.110	0.121	3.428
1 Fluid ounce weighs . .	422.8	0.881	0.966	27.406
1 Pint (16 fl.ounces) weighs	6766.2	14.146	15.456	378.496
BRITISH (IMPERIAL)				
<i>Fluid Measure.</i>				
1 Minim weighs . . . .	0.84	0.0018	0.019	0.0548
1 Fluid drachm weighs .	50.8	0.108	0.116	3.289
1 Fluid ounce weighs . .	406.1	0.846	0.928	26.315
1 Pint (20 fl.ounces) weighs	8122.0	16.920	18.562	526.308
METRIC FLUID MEASURE.				
1 Cubic Centimetre weighs	15.3	0.032	0.035	0.925
1 Litre weighs . . . . .	15347.2	31.973	35.102	925.792

\* Diluted Alcohol increases or decreases in volume about  $\frac{1}{3710}$  for each Fahrenheit degree of temperature.

Table of weight, with measure equivalents of DILUTED ALCOHOL, sp. gr. 0.928 at 15.6° C. (60° F.)

WEIGHT.	IN AMERICAN MINIMS.	AMERICAN (APOTHECARY) FL. OUNCES.	BRITISH (IMPERIAL) FLUID OUNCES.	METRIC CUBIC CENTIMETRES.
APOTHECARY WEIGHT.				
1 Grain measures . . . .	1.13	0.0023	0.0024	0.0702
1 Drachm measures . .	68.1	0.142	0.148	4.213
1 Ounce (troy) measures .	544.8	1.135	1.182	33.702
AVOIRDUPOIS WEIGHT.				
1 ounce measures . . .	495.4	1.046	1.075	30.583
1 pound (16 oz.) measures	7626.8	16.736	17.201	489.328
METRIC WEIGHT.				
1 Gramme measures . .	16.6	0.036	0.038	1.135

See remarks after the tables in Alcohol.



## AQUÆ—WATERS.

*Medicated Waters.*

The “Waters” of the New Pharmacopœia are mostly made in a different manner than by the old standard, viz.: by adding the essential oil to cotton picking and percolating with water. This process, if carefully conducted, gives good results and in some of the waters is an advantage. This is especially true of Cinnamon Water which, when made by the old method, soon became cloudy on account of the action of the Carbonate of Magnesium on the Cinnamic Acid of the oil. With this exception, however, the use of cotton instead of Carbonate of Magnesium or some other insoluble absorbent can hardly be said to be advantageous. The time consumed and “muss” made, being as much by the one process as by the other.

In making some considerable quantity of any medicated water by the new process (using cotton), ordinary wool cards may be used with much advantage in distributing the oil thoroughly through the cotton.

There is no doubt that distilled waters are much better than those filtered through either Carbonate of Magnesium or cotton, and if thus distilled it is unnecessary to use distilled water to prepare them as is directed by the Pharmacopœia. Medicated Waters distilled from fresh herbs or seeds may be greatly improved by redistilling. When waters are distilled they should be put, while still warm, into small bottles tightly sealed and kept in a cool place. Made and kept in this way they will remain unchanged

for years. A convenient still is here shown, which is well adapted to distilling waters, and for all purposes of a water-bath and still. It is low and broad, having a large bottom and condensing surface, well fitting it for rapid evaporation and



FENNER'S WATER-BATH AND STILL.

distillation. It may be used on any kind of heating apparatus.

Aqua Acidi Carbolici and Aqua Acidi Carbonici which were official in the 1870 are dismissed from the 1880 Pharmacopœia.

## AQUA AMMONIÆ.

### *Water of Ammonia.*

The official strength of this preparation is 10 per cent. by weight of the Ammonia gas. Druggists who buy this are never sure of getting a preparation up to this standard of strength, unless they buy it in carboys of manufacturing chemists of good reputation, and then it often deteriorates before it is used. It is much better and more economical for the retail druggist to make it from the stronger water of ammonia, as follows :

Stronger Water of Ammonia (28°),	1 pint.
Distilled Water,	1 ½ pints.

Mix.

This is much stronger than the "Aqua Ammonia" usually sold by druggists, but makes the official standard. One pint of the stronger to two pints of distilled water is as strong as is usually sold as 3 F, while even one pint of the stronger to three of distilled water, makes a fair Aqua Ammonia.

## AQUA AMYGDALÆ AMARÆ.

### *Bitter Almond Water.*

1870.

1880.

Oil Bitter Almonds, 16 min.	Oil Bitter Almonds, 15 min.
Carb. of Magnesium, 60 gr's.	Distilled Water, 2 pints.
Distilled Water, 2 pints.	Mix, agitate and filter.
Rub the oil with the Magnesium, add the water and filter.	

This water should be kept in an amber bottle, and prepared only in small quantities, as it is liable to decompose.

# AQUA ANETHI *Br.*

## *Dill Water.*

This water is official in the Br. Pharmacopœia, but not in the U. S. It is made as follows :

Dill Fruit, bruised,	1 pound av.
Water,	20 pounds "
Distill 10 pounds.	

It much resembles Anise Water.

# AQUA ANISI.

## *Anise Water.*

1870.

1880.

Oil of Anise, 30 minims.	Oil of Anise, 30 minims.
Carb. Magnesium, 60 gr's.	Cotton, 60 grains.
Distilled Water, 2 pints.	Distilled Water, 2 pints.
Rub the oil with the magnesium, add the water, and filter.	Add the oil to the cotton, pick, pack and percolate with the water.

## BY DISTILLATION.

Anise Seed in coarse powder,	5 ounces.
Water,	8 pints.
Distill 4 pints.	

Or,

Oil of Anise,	1 fluidrachm.
Coarse sand,	4 ounces.
Water,	8 pints.

Mix the oil, first with the sand, then the water, and distill 4 pints.

# AQUA AURANTII FLORUM.

## *Orange Flower Water.*

The 1870 U. S. P. directs 48 troyounces of recent Orange Flowers, and 16 pints of water, to distill 8 pints.

The 1880 U. S. P. directs 40 parts of recent Orange Flowers and 200 parts of water to distill 100 parts.

As it is next to impossible in this country to obtain recent Orange flowers, the formulæ are of no value to the American druggist.

Triple Orange Flower Water of continental manufacture

may be bought of the importing druggists, and reduced with one or two parts of distilled water.

An inferior Orange Flower Water may be made by rubbing 20 minims of Oil of Orange Flowers (Oil of Neroli) with 60 grains Carbonate of Magnesium, adding 2 pints of water, and filtering.

A better preparation may be made by mixing 30 minims of Oil of Orange Flowers (Neroli) with four ounces of sand and 6 pints of water, and distilling 3 pints.

Neither of these, however, represent the true flavor of the water distilled from the flowers.

### AQUA CAMPHORÆ.

#### *Camphor Water.*

1870.		1880.	
Camphor,	120 grains.	Camphor,	120 grains.
Alcohol,	40 minims.	Alcohol,	$\frac{1}{2}$ fl. ounce.
Carb. of mag-			
nesium,	240 grains.	Cotton,	$\frac{1}{2}$ ounce.
Distilled water,	2 pints.	Distilled water,	2 pints.
<p>Rub the camphor with the alcohol, then with the magnesium, add the water, and filter.</p>		<p>Dissolve the camphor in the alcohol, moisten the cotton with the solution, allow the alcohol to evaporate, pack and percolate two pints.</p>	

The 1880 process for Camphor Water is probably the best that has yet been suggested.

### AQUA CARUI, *Br.*

#### *Caraway Water.*

This water is official in the Br. Pharmacopœia, but not in the U. S. It is considerably used by English and German prescribers, and is, in fact, a finely-flavored water.

It is prepared as follows:

Caraway Fruit bruised,	1 pound av.
Water,	20 pounds av.
Distill 10 pounds.	

It may also be made from the oil.

Oil of Caraway Seed,	1 fluidrachm.
Coarse sand,	4 ounces.
Water,	8 pints.

Mix the oil with the sand, add the water, and distill four pints.

### AQUA CHLORI.

*Chlorine Water (Aqua Chlorinii, 1870).*

The process in the 1870 or 1880 revisions is essentially the same. The name is changed as shown in the heading.

### AQUA CHLOROFORMI, *Er.*

*Chloroform Water.*

Chloroform, by measure,	1 fluidrachm.
Distilled water,	24 fluidounces.

Put them in a quart bottle, and shake together. A small portion of the chloroform will remain undissolved in the bottom.

### AQUA CINNAMOMI.

*Cinnamon Water.*

1870.

1880.

Oil Cinnamon,	30 min.	Oil Cinnamon,	30 min.
Carb. Magnesium,	60 grs.	Cotton,	60 grs.
Distilled water,	2 pts.	Distilled Water,	2 pts.

Rub the oil with the magnesium, then the water, and filter.	Add the oil to the cotton, pick, pack, and percolate with the water.
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The 1880 preparation is much the better.

#### BY DISTILLATION.

Cinnamon Bark, bruised,	16 ounces avoirdupois.
Water,	2 gallons.
Distill 8 pints.	

Or,

Oil Cinnamon,	1 fluidrachm.
Coarse sand,	4 ounces.
Water,	1 gallon.

Mix the oil with the sand, add the water, and distill four pints.

## AQUA CREASOTI.

*Creasote Water.*

1870.

Creasote, 1 fluidr'm.  
 Distilled water, 1 pint.  
 Mix, agitate, and filter.

1880.

Creasote, by weight, 73 grs.  
 Distilled water, 1 pint.  
 Mix, agitate, and filter.

The 1880 preparation is about one-fifth stronger than the former standard. It is probably intended that this preparation should take the place also of the Carbolic Acid Water, which was official in the 1870 revision, and with which it is identical in action.

## AQUA DESTILLATA.

*Distilled Water.*

The processes of the 1870 and 1880 revisions do not differ materially. The following general method is adapted to the capacity of the retail druggist:

Fill the boiler of the still two-thirds full of water, put on the condenser without the water bath, and apply the heat, allowing a stream of cold water to run upon the top of the condenser; discard the first three or four ounces of water that distills, and continue the distillation until four-fifths of the water put in the boiler has been recovered. Preserve in full, well-stopped bottles.

## AQUA FCENICULI.

1870.

Oil Fennel, 30 minims.  
 Carb. Magnesium, 60 grains.  
 Distilled Water, 2 pints.  
 Rub the oil with the magnesium, add the water and filter.

1880.

Oil Fennel, 30 minims.  
 Cotton, 60 grains.  
 Distilled Water, 2 pints.  
 Add the oil to the cotton, pick, pack and percolate with the water.

## BY DISTILLATION.

Fennel Fruit, bruised, 20 ounces avoirdupois.  
 Water, 2 gallons.  
 Distill one gallon.

Or,

Oil Fennel,	1 fluidrachm.
Coarse Sand,	4 ounces.
Water,	1 gallon.

Mix the oil with the sand, add the water and distill 4 pints.

### AQUA LAURO CERASI, *Br.*

#### *Cherry Laurel Water.*

Fresh Leaves of Cherry Laurel,	1 pound avoird.
Water,	3½ pints.

Crush the leaves and macerate with water in a warm place for 24 hours, then distill 20 ounces.

The Cherry Laurel is seldom found in this country, and it has been demonstrated by the late Prof. Proctor, that the leaves of our ordinary wild cherry, treated in the same way will produce an identical preparation. It is, therefore, advised to use them in making "Cherry Laurel Water" in this country.

Cherry Laurel Water may also be made by adding 15 drops Oil of Cherry Laurel to two pints of Distilled Water and agitating until dissolved.

### AQUA GAULTHERIÆ.

#### *Wintergreen Water*

Although this water is not known to be official in any Pharmacopœia, yet it is used and prescribed by physicians to quite an extent, and we know of no reason why it should not be included in the medicated waters. It may be made as follows :

Oil of Wintergreen,	30 minims.
Phosphate of Lime, precipitated,	120 grains,
Distilled Water,	2 pints.

Rub the oil with the Phosphate of Lime, add the water and filter.

#### BY DISTILLATION.

Wintergreen, fresh herb,	20 ounces avoirdupois.
Water,	2 gallons.

Distill 8 pints.



Or,

Oil Wintergreen,	1 fluidrachm.
Coarse Sand,	4 ounces.
Water,	1 gallon.

Mix the oil with the sand, add the water and distill 4 pints.

## AQUA MENTHÆ PIPERITÆ.

### *Peppermint Water.*

1870.

Oil Peppermint, 30 minims.  
 Carb. Magnesium, 60 grains.  
 Distilled Water, 2 pints.  
 Rub the oil with the magnesium, add the water and filter.

1880.

Oil Peppermint, 30 minims.  
 Cotton, 60 grains.  
 Distilled Water, 2 pints.  
 Add the oil to the cotton, pick, pack and percolate with the water.

### BY DISTILLATION.

Peppermint, fresh herb,	20 ounces avoirdupois,
Water,	2 gallons.

Distill 8 pints.

Or,

Oil Peppermint,	1 fluidrachm.
Coarse Sand,	4 ounces.
Water,	1 gallon.

Mix the oil with the sand, add the water and distill 4 pints.

## AQUA MENTHÆ VIRIDIS.

### *Spearmint Water.*

1870.

Oil Spearmint, 30 min.  
 Carb. Magnesium, 60 grs.  
 Distilled water, 2 pts.

1880.

Oil Spearmint, 30 min.  
 Cotton, 60 grs.  
 Distilled water, 2 pts.

Rub the oil with the magnesium, add the water, and filter. Add the oil to the cotton, pick, pack, and percolate with the water.

### BY DISTILLATION.

Spearmint, fresh herb,	20 ounces, avoirdupois.
Water,	2 gallons.

Distill 8 pints.

Or,

Oil of Spearmint,	1 fluidrachm.
Coarse sand,	4 ounces.
Water,	1 gallon.

Mix the oil with the sand, add the water, and distill four pints.

### AQUA PIMENTÆ, *Br.*

#### *Pimento Water.*

Pimento, bruised,	10 ounces, avoirdupois.
Water,	1 gallon.

Distill 4 pints.

This may also be prepared by adding 30 minims Oil of Pimento to 60 grains Cotton, picking, packing and percolating with 2 pints of Distilled Water.

It is not as good prepared with Carb. Magnesium, as the oil has an acid reaction.

### AQUA ROSÆ.

#### *Rose Water.*

The 1870 and 1880 formulæ are so similar, that only the 1880 is here repeated.

Recent Pale Rose (petals),	2 parts.
Water,	10 parts.
Distill by means of steam,	5 parts.

The same proportions may be used, and the distillation performed by the ordinary still.

Rose Water, to be fine, should be redistilled. It cannot be profitably distilled in this country, as our roses lack the fragrance of the European varieties.

Triple Rose Water may be bought of the importing druggists, and reduced with one or two parts of distilled water. It is then much better and cheaper than any of domestic production.

A fair quality of Rose Water may be made by adding 10 drops of Otto (Oil) of Rose to 30 grains of Cotton, picking, packing and percolating with 2 pints of hot distilled water.

It may also be made by mixing 20 minims of Otto of

Rose with 4 ounces of Sand and 1 gallon of water, and distilling 4 pints.

The imported Rose Water is, however, superior to any home production.

### AQUA SAMBUCCI, *Br.*

#### *Elder Flower Water.*

Fresh Elder Flowers,	10 pounds, avoird.
Water,	20 pints.

Distill 10 pints.

### ARGENTUM—SILVER.

Silver, which was officinal in the 1870 revision of the Pharmacopœia, is now dismissed, its Salts only being retained. Two new preparations of Silver have been introduced, viz.: Iodide of Silver and Diluted Nitrate of Silver. The method of making Nitrate of Silver has also been changed as shown below.

### ARGENTI NITRAS DILUTUS.

#### *Diluted Nitrate of Silver.*

1880.

Nitrate of Silver,	50 parts.
Nitrate of Potassium,	50 parts.

Melt the salts together in a porcelain crucible, at as low a temperature as possible stirring the melted mass well until it flows smoothly, then cast it in suitable moulds.

This new official preparation is similar to the unofficial mitigated nitrate of silver that has been furnished by manufacturers for some time.

### ARGENTI NITRAS FUSUS.

#### *Moulded Nitrate of Silver.*

The New Pharmacopœia makes this by adding four parts Hydrochloric Acid to 100 parts Nitrate of Silver and fusing as heretofore.

## BISMUTHI CITRAS.

*Citrate of Bismuth.*

Subnitrate of Bismuth,	10 parts.
Citric Acid,	7 parts.
Distilled water, a sufficient quantity.	

“Boil the Subnitrate of Bismuth and the Citric Acid with forty parts of distilled water until a drop of the mixture yields a clear solution with Water of Ammonia. Then add 500 parts of distilled water, allow the suspended matter to deposit, wash the precipitate (first by decantation and afterwards on a strainer) with distilled water until the washings are tasteless, and dry the residue at a gentle heat.”

This is a new official preparation, although it has been furnished by manufacturing chemists for some time. It can be readily prepared by druggists.

## BISMUTHI ET AMMONII CITRAS.

*Citrate of Bismuth and Ammonium.*

Citrate of Bismuth,	10 parts.
Water of Ammonia,	
Distilled Water, each a sufficient quantity.	

“Mix the Citrate of Bismuth with 20 parts of distilled water to a smooth paste, and gradually add Water of Ammonia until the salt is dissolved, and the liquid has a neutral or only faintly alkaline reaction. Then filter the solution, evaporate it to a syrupy consistence and spread it on plates of glass, so that on drying the salt may be obtained in scales.”

This is also a new official preparation, which has formerly been supplied mostly by manufacturing chemists. It is used chiefly in making solutions, elixirs, etc., and as it is not difficult to make, it may be readily prepared by those who have much use for it. For using in elixirs, etc., a solution may be made from the Citrate of Bismuth, which saves the trouble of preparing it in scales. This will be noticed among the solutions.

## CARBO ANIMALIS PURIFICATUS.

*Purified Animal Charcoal.*

	1870.	1880.
Animal Charcoal, in fine powder,	16 ounces.	16 ounces.
Hydrochloric Acid, by weight,	16 ounces.	24 ounces.
Water,	a pint.	sufficient.

Pour the Hydrochloric Acid previously mixed with the water upon the Animal Charcoal and digest the mixture on a water bath for one or two days. Pour off the liquid and add water, digest for two hours, then pour off and again add water, continuing the washing until the washings show no trace of Hydrochloric Acid when tested with a solution of nitrate of silver. Then heat to dull redness and when cool keep in well stopped bottles.

## CERATA — CERATES.

The Cerates of the 1880 Pharmacopœia are not materially changed from those of the former edition. A brilliant opportunity presented itself for the revisers of the Pharmacopœia to do away with Lard as a cerate base, and use the more serviceable and efficient Petrolatum (Cosmoline Vaseline, etc.), in its place. It would have been more in conformity with the advance of pharmaceutical knowledge to have done so, for in it we have a base which is not affected by time nor exposure. What druggist has not been vexed and disgusted with his rancid Cerates? But with the Petrolatum base this never occurs.

The formulæ which follow compare the 1870 with the 1880 Cerates, and give also the formulæ for making them with the Petrolatum or Cosmoline base. The latter are mostly copied from a former supplement to FENNER'S FORMULARY. Petrolatum having a high melting point (120° F.) should be used.

The following Cerates are added or omitted in the 1880 revision :

Added.  
Ceratum Camphoræ.

Omitted.  
Ceratum Resinæ Comp.  
“ Saponis.  
“ Zinci Carbonatis.

### CERATUM.

<i>Cerate.</i>	1870.	1880.
White Wax,	4 ounces.	3 ounces.
Lard,	8 ounces.	7 ounces.

Melt them together and stir the mixture constantly until cool.

#### PETROLATUM CERATE.

Petrolatum (Cosmoline or Vaseline),	7 ounces.
White Wax, or Paraffin,	3 ounces.

Melt them together and stir while cooling.

REMARK.—It will be seen that the 1880 formula does not direct so much wax as the 1870, the proportion being as 3.6 is to 4. When the Cerate is made with the Petrolatum it is not so white as when made with Lard, but if properly stirred while cooling it will be a rich, creamy color, which is fully as desirable. It is a much smoother preparation than can be made with lard, and will keep indefinitely.

### CERATUM CAMPHORÆ.

#### *Camphor Cerate.*

1880.

Camphor Liniment (1 part camphor to 4 parts cotton seed oil),	1 ounce.
Olive Oil,	4 ounces.
Cerate,	28 $\frac{1}{3}$ ounces.

Mix the Camphor Liniment and the Olive Oil and incorporate with the Cerate.

#### MADE WITH PETROLATUM.

Camphor, in fine powder,	$\frac{1}{4}$ ounce.
White Wax, or Paraffin,	8 ounces.
Petrolatum,	24 ounces.

Melt the Wax and the Petrolatum, and while cooling, but still liquid, add the Camphor.

REMARK.—This is a new preparation of the 1880 Pharma-

copœia, which seems entirely unnecessary, as the quantity of camphor is too small to be of benefit, except as an anti-septic. As it is used only in the Cerate of Subacetate of Lead, that was probably the design of the revisers, but with the Petrolatum base it is not needed.

### CERATUM CANTHARIDIS.

*Cantharides Cerate, Blistering Cerate, or "Blister Plaster."*

	1870.	1880.
Cantharides, No. 60 powder,	6 ounces.	7 ounces.
Yellow Wax,	3½ ounces.	4 ounces.
Resin,	3½ ounces.	4 ounces.
Lard,	5 ounces.	5 ounces.
	<hr/> 18	<hr/> 20

To the Wax, Resin and Lard, previously melted together and strained through muslin, add the Cantharides and by means of a water-bath keep the mixture in a liquid state for half an hour, stirring constantly. Then remove from the water-bath and stir constantly until cool.

#### MADE WITH PETROLATUM.

Cantharides, in very fine powder,	7 ounces.
Yellow Wax,	4 ounces.
Resin,	4 ounces.
Petrolatum,	5 ounces.

Same directions for making as above.

REMARK.—It will be observed that the 1880 formula is a trifle stronger of Cantharides than the 1870, but not enough to be taken into account. The tendency to mould, which is observable in the Cantharides Cerate when made with Lard, is avoided when Petrolatum is used.

### CERATUM CETACEI.

*Spermaceti Cerate.*

	1870.	1880.
Spermaceti,	1 ounce.	1 ounce.
White Wax,	3 ounces.	3½ ounces.
Olive Oil,	5 ounces.	5½ ounces.
	<hr/> 9	<hr/> 10

Melt together the Spermaceti and Wax; then add the Olive Oil previously heated, and stir the mixture constantly until cool.



## MADE WITH PETROLATUM.

Spermaceti,	1 ounce.
Paraffin,	2 ounces.
Petrolatum,	7 ounces.

Melt together, and stir until cool.

REMARK.—Unless the best imported Olive Oil is used in the official formula the preparation has a disagreeable odor. Made by the latter formula, it is as efficient in all respects, has no disagreeable odor, and is cheaper.

## CERATUM EXTRACTI CANTHARIDIS.

*Cerate of Extract of Cantharides.*

	1870.	1880.
Cantharides in No. 60 powder,	5 ounces av.	6 ounces av.
Resin,	3 ounces av.	3 ounces av.
Yellow Wax,	6 ounces av.	7 ounces av.
Lard,	7 ounces av.	7 ounces av.
	21	23

Alcohol, a sufficient quantity.

Moisten the Cantharides with 2 fluidounces of Alcohol, and pack in a percolator, gradually pour on Alcohol, and percolate until the Cantharides are exhausted, or until about  $2\frac{1}{4}$  pints of the percolate have passed. Distill off 2 pints of the Alcohol by means of a water-bath, and evaporate the remainder to the consistence of a soft extract, or to about 3 ounces avoirdupois. Add to this the Resin, Wax and Lard previously melted, and keep the whole at a temperature of  $100^{\circ}$  C. ( $212^{\circ}$  F.) for 15 minutes. Lastly, strain the mixture through muslin and stir it constantly until cool.

## MADE BY WATER-BATH PERCOLATION WITH PETROLATUM.

Cantharides in No. 60 powder,	6 ounces av.
Resin,	3 ounces av.
Yellow Wax,	7 ounces av.
Petrolatum,	7 ounces av.
Alcohol,	a sufficient quantity.

Moisten the Cantharides with two fluidounces of Alcohol, and pack firmly in the Water-Bath Percolator. Pour upon it a pint of Alcohol, and set in a warm place for two days; then heat very moderately, and, after one hour, begin to percolate, adding Alcohol to the drug, and continuing the heat and percolation until 20 fluidounces have passed.

Distill off a pint of Alcohol, and evaporate the remainder, if necessary, to 3 ounces; add to this the Resin, Wax and Petrolatum previously melted together, and keep the whole at the boiling point of water for 15 minutes; then strain the mixture through muslin and stir until cool.

REMARK.—It is well known that heat assists very materially to dissolve the active principle of Cantharides, *cantharidin*. Therefore, the latter formula is much to be preferred in making the preparation, both as regards efficiency of the product, and economy in making. The 1880 preparation is about 20 per cent. stronger than the 1870.

### CERATUM PLUMBI SUBACETATIS.

*Cerate of Subacetate of Lead—Goulard's Cerate.*

1870.		1880.	
Solution Subacetate		Solution Subacetate of	
of Lead,	2½ fl.oz.	Lead by weight,	2 oz.
White Wax,	4 tr.oz.	Camphor Cerate,	8 oz.
Olive Oil,	8 tr.oz.		—
Camphor,	30 grs.		10
	14½	Mix them thoroughly. This	
Mix as directed.	See U. S.	Cerate should be freshly	
P., 1870.		prepared when wanted for	
		use.	

#### MADE WITH PETROLATUM.

Solution Subacetate of Lead, by weight,	2¼ ounces.
Paraffin,	3 ounces.
Petrolatum,	7 ounces.
Camphor, in fine powder,	3 grains.

Melt the Paraffin with the Petrolatum and when cooling add the Camphor. When it begins to solidify add the solution and stir constantly with a wooden or horn spatula until cool.

REMARK.—The U. S. Dispensatory, fifteenth edition, remarks that “the process now officinal differs from the U. S. P. of 1870, experience having shown the futility of all expedients to prevent rancidity.” This difficulty is but little, if any, remedied in the present officinal formula, but when made with Petrolatum, as above, no trouble is experienced. True, it has not the white color of the officinal preparation, but the color is just as desirable.

## CERATUM RESINÆ.

*Resin Cerate, Basilicon Ointment.*

	1870.	1880.
Resin,	5 ounces.	7 ounces.
Yellow Wax,	2 ounces.	3 ounces.
Lard,	8 ounces.	10 ounces.
	15	20

Melt them together at a moderate heat, strain the mixture through muslin and allow to cool without stirring.

## MADE WITH PETROLATUM.

Resin,	7 ounces.
Yellow Wax,	3 ounces.
Petrolatum,	10 ounces.

Melt them together, strain, and cool without stirring.

## CERATUM RESINÆ COMPOSITUM.

*Compound Resin Cerate.*

Although this Cerate is deleted in the 1880 Pharmacopœia it is still frequently prescribed; the formula is therefore given for it, as prepared with Petrolatum.

Resin,	2 ounces.
Yellow Wax,	2 ounces.
Turpentine (White Pine Gum),	1 ounce.
Petrolatum,	3 ounces.

Melt them together, strain, and stir until cool.

This differs from the 1870 formula in substituting Petrolatum for Suet and Flaxseed Oil.

## CERATUM SABINÆ.

*Savine Cerate.*

	1870.	1880.
Fluid Extract of Savine,	2¼ fluidounces.	2½ ounces av.
Resin Cerate,	9 troyounces.	9 ounces av.

Melt the Resin Cerate, add the Fl. Ex. of Savine, and heat moderately until the Alcohol has evaporated; then stir constantly until cool.

## MADE WITH PETROLATUM.

Fluid Extract of Savine,	3 fluidounces.
Resin Cerate, made with Petrolatum,	9 ounces avoirdupois.

Melt the Cerate, add the Extract and evaporate the Alcohol; then stir until cool.

## CERATUM SAPONIS.

*Soap Cerate.*

Why this Cerate is omitted in the 1880 Pharmacopœia is not apparent, as it is prescribed as frequently as many of the Cerates that remain; the formula is therefore given for it as prepared with Petrolatum.

Soap Plaster,	2 ounces.
Yellow Wax,	1 ounce.
Petrolatum,	5½ ounces.

Melt the Plaster and Wax together and add the Petrolatum; continue the heat until it is liquified, then stir the mixture until cool.

## CERATUM ZINCI CARBONATIS.

*Cerate of Carbonate of Zinc.*

This Cerate, which was officinal in the 1870 Pharmacopœia, seems very properly to have been omitted from the 1880 revision, as it is not so essentially different from the Oxide of Zinc Ointment as to require a separate formula.

## CHARTÆ — MEDICATED PAPERS.

These preparations were first made official in this country in the 1870 Pharmacopœia. They have been but little prepared by druggists, but similar preparations have been furnished to a considerable extent by manufacturers. As they are as readily prepared as many other preparations that druggists make, and afford a good profit, it is advisable that more druggists should try their hand at making them. The Mustard Paper, especially, has a large sale.

## CHARTA CANTHARIDIS.

*Cantharides Paper.*

White Wax,	4 ounces.
Spermaceti,	1½ ounces.
Olive Oil, by weight,	2 ounces.
Canada Turpentine (Balsam Fir),	½ ounce.
Cantharides, in No. 40 powder,	½ ounce.
Water,	5 ounces.

“ Mix all the substances in a tinned vessel and boil gently

for two hours, constantly stirring; strain through a woollen strainer without expressing, and, by means of a water-bath, keep the mixture in a liquid state in a shallow flat-bottomed vessel with an extended surface. Coat strips of sized paper with the melted plaster, on one side only, by passing them successively over the surface of the liquid. When dry cut the strips into rectangular pieces."

The 1870 and 1880 formula exactly correspond.

## CHARTA POTASSII NITRATIS.

### *Nitrate of Potassium Paper.*

Nitrate of Potassium,	2 ounces.
Distilled Water,	8 ounces.

"Dissolve the Nitrate of Potassium in the Distilled Water; immerse strips of white unsized paper in the solution and dry them."

Coarse straw paper is better than white paper for this purpose.

## CHARTA SINAPIS.

### *Mustard Paper.*

1870.

Black Mustard, in powder,	90 grains.
Solution of Gutta-Percha, a sufficient quantity.	

Mix the Mustard with enough of the solution to make it of a semi-liquid consistence; then apply the mixture with a brush to heavy, well-sized paper, and allow the surface to dry.

1880.

### *Adapted to Water-bath Percolation.*

Black Mustard, in No. 60 powder,	
Benzin,	
Solution of Gutta-Percha, each, a sufficient quantity.	

Pack the Mustard firmly in the water-bath percolator and gradually pour Benzin upon it; pour hot water in the water-bath surrounding the percolator, and percolate with the Benzin until the percolate ceases to produce a permanent greasy stain upon blotting paper. (This operation is for the purpose of removing the fixed oil from the mustard.) Remove the powder from the percolator and dry it by exposure to the air. Then mix with it sufficient of the Solution of Gutta-Percha to give it a semi-liquid

consistence, and apply with a brush to one side of heavy, well-sized paper and allow to dry. Each square inch of the paper should contain about six grains of Mustard. Before applying to the skin the paper should be immersed in warm water for about 15 seconds.

The latter formula makes much the better preparation, as the removal of the fixed oil of the Mustard allows it to act much more promptly.

## CHLOROFORMUM PURIFICATUM.

### *Purified Chloroform.*

The 1880 formula differs from the 1870 only in using water by weight instead of measure, and in a very slight diminution of the quantity of Alcohol. This preparation is seldom made by the retail druggist, as it requires nicety of manipulation and careful attention.

## CINCHONA.

### *Cinchona.*

1870.

1880.

<p>The bark of all species of the genus <i>Cinchona</i>, containing at least two per cent. of the proper <i>Cinchona</i> Alkaloids, which yield crystallizable salts.</p>	<p>The bark of any species of <i>Cinchona</i> containing at least 3 per cent. of its peculiar alkaloids.</p>
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The change in the percentage of alkaloidal value will be observed. Too little attention is paid by retail druggists to the quality of *Cinchona* Bark which they use. If it is only "*Cinchona* Bark" it is satisfactory. The greater share of the Bark sold to retail druggists will not assay 1 per cent. of crystallizable alkaloids, and much of it is *utterly* worthless. The "*Red*" Bark, which is sold by most wholesale houses to the retail trade, is the "*Rejected Bark*" of the Quinine market, and is worth scarcely more for medicine than so much Hemlock Bark.

There is no way to estimate the true value of *Cinchona* Bark except by assaying it, and but few druggists go to that trouble. The 1880 Pharmacopœia gives processes for assaying which are perhaps as simple and reliable as any that can be used by retail druggists. Druggists should *insist* that their jobbers furnish them *Cinchona* Bark that will come up to the standard of the 1880 Pharmacopœia. Until they do that, and are willing to pay a good price for a good article,

their Cinchona preparations, once held in such high esteem, will continue to be of but little medicinal value.

### CINCHONA FLAVA.

*Yellow Cinchona, Calisaya Bark.*

1870.

1880.

<p>The bark of Cinchona Calisaya. It should not contain less than 2 per cent. of Alkaloids which yield crystallizable Salts.</p>	<p>The bark of the trunk of Cinchona Calisaya, containing at least 2 per cent. of Quinine.</p>
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The 1880 standard requires at least 2 per cent. of Quinine, while the 1870 requires only 2 per cent. of total alkaloids.

### CINCHONA RUBRA.

*Red Cinchona, Red Bark.*

1870.

1880.

<p>The bark of Cinchona Succirubra. It should contain not less than 2 per cent. of alkaloids which yield crystallizable Salts.</p>	<p>The bark of the trunk of Cinchona Succirubra, containing at least 2 per cent. of Quinine</p>
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The 1880 standard requires at least 2 per cent. of Quinine, while the 1870 requires only two per cent. of total alkaloids.

### CINCHONIDINÆ SULPHAS.

*Sulphate of Cinchonidine.*

This Salt is first officinal in the 1880 Pharmacopœia, but has had a very extensive sale for the past ten years under the name, *Sulphate of Cinchonidia*, by which title it will be readily recognized by our readers.

### CINCHONINA.

*Cinchonine.*

Although this Alkaloid has been in the market for many years as a manufacturer's product under the name of *Cinchonia*, it has not had the honor of official recognition until the present revision of the Pharmacopœia. By its former name it will be readily recognized.



## CINCHONINÆ SULPHAS.

*Sulphate of Cinchonine—1880.**Sulphate of Cinchonia—1870.*

This Salt was officinal in the 1870 Pharmacopœia, under the name of *Cinchonæ Sulphas*, but has been re-christened as above.

REMARK.—The changes which have been made in the names of the Alkaloids of Cinchona and their Salts will make much confusion among druggists and physicians unless properly understood. The druggist must bear in mind that his physicians will mostly write the old names for some time to come, and that manufacturers will label them by the new names as fast as the old stock runs out; therefore much care will be required in dispensing these preparations.

## CODEINA.

*Codeine.*

This Alkaloid of Opium first appears in the 1880 revision as officinal. It has been furnished by manufacturers for many years under the name of *Codeia*.

## COLLODIUM.

*Collodion.*

1870.			1880.		
Pyroxylon,	200	grs.	Pyroxylin,	$\frac{1}{2}$ oz.	av
Stronger Ether,	$12\frac{1}{2}$	fl.oz.	Stronger Ether,	$11\frac{5}{8}$	fl.oz.
Stronger Alcohol,	$3\frac{1}{2}$	fl.oz.	Alcohol,	$3\frac{7}{8}$	fl.oz.

Mix the Ether and Alcohol in a suitable bottle, and having added the Pyroxylon to the mixture, agitate occasionally until it is dissolved.

Add the Alcohol to the Pyroxylin in a bottle and let it stand for 15 minutes; then add the Ether and shake the mixture until the Pyroxylin is dissolved. Set aside until clear, then decant it from any sediment which may have formed.

The difference in spelling Pyroxylin will be observed, also the slight difference in the proportion of the ingredients. As the bulk of Ether varies considerably with the temperature it should be taken at 60° F. Collodion should always be kept in a cool place, and never dispensed near a fire or light.

## COLLODIUM CUM CANTHARIDE.

*Collodion with Cantharides.**Cantharidal Collodion.*

1870.

Cantharides, in fine powder,	8	troyounces.
Pyroxylon,	100	grains.
Canada Turpentine (Balsam Fir),	320	grains.
Castor Oil,	160	grains.
Stronger Ether,	1 1/2	pints.
Stronger Alcohol,	a sufficient quantity.	

“Introduce the Cantharides into a cylindrical percolator, and, having pressed it firmly, gradually pour on the Ether. When 15 fluid ounces have passed set aside the liquid in a close vessel and continue the percolation with Stronger Alcohol until half a pint more of liquid is obtained. Set this in a warm place for spontaneous evaporation, and, when it is reduced to a fluid ounce mix it with the reserved liquid. Then add the Pyroxylon, the Canada Turpentine and the Castor Oil to the mixture, and agitate occasionally until they are dissolved.”

1880.

Cantharides in No. 60 powder,	60	parts.
Flexible Collodion (by weight),	85	parts.
Commercial Chloroform,	a sufficient quantity.	

“Pack the powder firmly in a cylindrical percolator, and gradually pour Commercial Chloroform upon it until two hundred and fifty (250) parts of tincture are obtained, or until the Cantharides are exhausted. Recover by distillation on a water-bath about 200 parts of the Chloroform, and evaporate the residue in a capsule by means of a water-bath until it weighs 15 parts. Dissolve this in the Flexible Collodion, and let it stand at rest for forty-eight hours. Finally pour off the clear portion from any sediment.”

## MADE BY WATER-BATH PERCOLATION.

Cantharides in fine powder,	8	ounces av.
Pyroxylon,	1/2	ounce av.
Canada Turpentine (Balsam Fir),	320	grains.
Castor Oil,	160	grains.
Stronger Ether,	11 5/8	fluid oz.
Alcohol,	3 7/8	fluid oz.
Commercial Chloroform,	a sufficient quantity.	

Pack the Cantharides firmly in the Water-Bath Percolator, and pour upon it a pint of Chloroform, adjusting the

cover tightly on the percolator. Pour water heated to about 150 degrees in the water-bath which surrounds the percolator, and keep at a moderate heat for half an hour; then remove from the fire and begin to percolate, adding Chloroform to the drug in the percolator, and continuing the percolation until the Cantharides is exhausted, or until about 20 fluidounces have passed. Distill off the Chloroform until only 2 ounces of the extract remains. When cool, add to this extract the other ingredients which have previously been made into Flexible Collodion by mixing them together, as directed for making Collodion and Flexible Collodion, and, after standing without agitation for 48 hours, pour off from any sediment that may have subsided.

The Chloroform remaining in the drug after percolation may be recovered by adjusting the still top and distilling as directed.

REMARK.—Cantharidal Collodion made by the above process is superior to any other. The heat assists to dissolve the Cantharidin, making the preparation stronger than can be made by any other method.

### COLLODIUM FLEXILE.

#### *Flexible Collodion.*

1870.		1880.
Collodion,	a pint.	Collodion, by wgt., 92 parts.
Canada Turpentine,	320 grs.	Canada Turpentine, 5 parts.
Castor Oil,	160 grs.	Castor Oil, 3 parts.
Mix them, and keep the mixture in a well-stopped bottle.		Mix them and keep the mixture in a cool place remote from lights or fire.

### COLLODIUM STYPTICUM.

#### *(Styptic Collodion.)*

	1880.	
Tannic Acid,	by weight,	4 parts, or 160 grains.
Alcohol,		1 part, or 52 minims.
Stronger Ether,		4 parts, or 220 minims.
Collodion,		11 parts, or 1 1/8 fl. ounces.

Put the Tannic Acid in a bottle, add the Alcohol, Ether and Collodion, and agitate until dissolved.

This new official preparation is probably introduced to take the place of many non-official preparations of a similar nature that have been used for some time. They have been furnished by manufacturers under various names—as Styptic Collodion, Styptic Colloid, etc.

An excellent Antiseptic Styptic Collodion may be made as follows:

### ANTISEPTIC, STYPTIC COLLODION.

Tannic Acid,	120 grains.
Benzoic Acid,	120 grains.
Carbolic Acid,	240 grains.
Collodion,	6 fl. ounces.

Mix and dissolve.

A good Styptic Colloid, for use in erysipelas and for checking the flow of blood, may be prepared as follows:

### STYPTIC COLLOID.

Chloride of Iron (the Salt),	60 grains.
Collodion,	1 fl. ounce.

Dissolve the Chloride of Iron in the Collodion.

### CONFECTIONES — CONFECTIONS.

Since the introduction of manufacturers' sugar and gelatine-coated pills, and the many "patent" fruit laxatives, etc., the retail druggist has had but little use for the once popular Confections. The present (1880) Pharmacopœia retains but two of the confections that were in the 1870 revision. Even these two are so little used that they are now seldom prepared by druggists.

### CONFECTIO OPII.

#### *Confection of Opium.*

U. S. 1870.

Opium, in fine powder,	270 grains.
Aromatic Powder,	6 troyounces.
Clarified Honey,	14 troyounces.

Rub the Opium with the Aromatic Powder, then add the Honey, and beat the whole together until thoroughly mixed.

### BRITISH PHARMACOPŒIA.

Compound Powder of Opium,	192 grains.
Syrup (Imperial Measure),	1 fluidounce.

Mix them together.

REMARKS.—Although this confection is not retained in

the present Pharmacopœia, it is here given because it is quite frequently called for and used in old prescriptions.

Confections of Opium under the names of *Theriaca* and *Mithridate* were exceedingly popular in the past century, and are now occasionally wanted. It is safe and expedient to use Confection of Opium whenever they are directed.

### CONFECTIO ROSÆ.

#### *Confection of Rose.*

	1870.	1880.
Red Rose in No. 60 powder,	2 ounces.	2 ounces.
Sugar,	15 ounces.	16 ounces.
Clarified Honey,	3 ounces.	3 ounces.
Rose Water,	4 ounces.	4 ounces.

Rub the Rose (petals) with the Rose Water heated to 65° C. (149° F.), then gradually add the Sugar and Honey and beat the whole together until thoroughly mixed.

### CONFECTIO SENNÆ.

#### *Confection of Senna.*

	1870.	1880.
Senna, in No. 60 powder,	8 ounces av.	10 ounces av.
Coriander, in No. 40 powder,	4 ounces av.	6 ounces av.
Cassia Fistula, bruised,	16 ounces av.	16 ounces av.
Tamarind,	10 ounces av.	10 ounces av.
Prune, sliced,	7 ounces av.	7 ounces av.
Fig, bruised,	12 ounces av.	12 ounces av.
Sugar, in coarse powder,	30 ounces av.	50 ounces av.
Water, a sufficient quantity (1870).		57½ fl. ounces.

“Place the Cassia Fistula, Tamarind, Prune and Fig in a close vessel with three pints of water and digest for three hours, by means of a water-bath. Separate the coarser portions with the hand and rub the pulpy mass first through a coarse hair sieve and then through a fine one, or through a muslin cloth. Mix the residue with the remainder of the water, and having digested the mixture for a short time, treat as before and add the product to the pulpy liquid first obtained. Then by means of a water-bath, dissolve the sugar in the pulpy liquid and evaporate the whole until it weighs 84 ounces avoirdupois. Lastly, add the Senna and Coriander and incorporate them thoroughly with the other ingredients while yet warm.”

The finished product of the 1870 Pharmacopœia should weigh 96 ounces avoirdupois.

The finished product of the 1880 Pharmacopœia should weigh 100 ounces avoirdupois.

The Fruit Laxatives or Cathartic Lozenges that have become quite popular as made by several manufacturers, are similar in composition to the Confection of Senna.

## CONIUM.

### *Conium.*

Both the leaves and the fruit of *Conium Maculatum* were official in the 1870 Pharmacopœia; in the 1880 revision only the fruit is retained.

## DECOCTA — DECOCTIONS.

Decoctions, once so popular, have had their day, and the process of *boiling* herbs, leaves, roots, barks, etc., in water, to obtain their medicinal virtues, is mostly abandoned. The processes of cultured pharmacy have crowded out the ruder methods of our forefathers, and the skillet has given place to the percolator.

Of the twelve decoctions that were officinal in the 1870 Pharmacopœia, two, only, are retained in the present revision.

### GENERAL FORMULA FOR DECOCTIONS.

#### 1870.

Although no general formula is given in the 1870 revision, yet from the formulæ that are given the following general formula may be deduced

The substance,  
bruised,      a troy ounce.  
Water sufficient  
to make      a pint.

Boil for fifteen minutes and strain, making the measure of the finished product a pint.

#### 1880.

The substance,  
coarsely com-  
minuted,      1 part.  
Water, sufficient  
to make      10 parts.

Put the substance into a suitable vessel provided with a cover, pour upon it 10 parts of cold water, cover and boil for 15 minutes, then strain and add water enough to make the product 10 parts.

### BY WATER-BATH PERCOLATION.

The substance, coarsely comminuted,      1 ounce avoird.  
Water enough to make      10 fluidounces.

Having adjusted the perforated diaphragm or strainer in the bottom of a small-sized water-bath percolator, put the substance in the percolator and pour the water upon it. Cover the percolator closely with the cover, and, having filled the vessel surrounding the percolator with water, heat to boiling. Boil for 15 minutes and draw off the liquid by means of the stop-cock, adding enough water, through the percolator, to make 10 fluidounces of the product when cool.

It is needless to remark that decoctions made by water-bath percolation are much better than those made by any other process.

### DECOCTUM CETRARIÆ.

#### *Decoction of Cetraria.*

	1870.	1880.
Cetraria (Iceland Moss),	240 grains.	364 grains.
Water, enough to make	a pint.	a pint.

Cover the Cetraria with cold water for half an hour, express and throw away the liquid. Then boil the drug with a pint of water for half an hour, strain and add enough cold water through the strainer to make a pint of the finished product.

### DECOCTUM SARSAPARILLÆ COMPOSITUM.

#### *Compound Decoction of Sarsaparilla.*

	1870.	1880.
Sarsaparilla, crushed,	720 grains.	729 grains.
Sassafras, in coarse powder,	120 "	156 "
Guaiacum Wood, rasped,	120 "	156 "
Liquorice Root, crushed,	120 "	156 "
Mezereum, crushed,	45 "	78 "
Water enough to make	a pint.	a pint.

Boil the Sarsaparilla and Guaiacum Wood for half an hour with a pint of water; then add the Sassafras, Liquorice and Mezereum, cover the vessel well and macerate, with gentle heat for two hours; then strain and add enough water through the strainer to make a pint of the finished product.

The same directions should be followed when made by water-bath percolation.

### OTHER DECOCTIONS.

As the other decoctions of the 1870 Pharmacopœia and the official decoctions of the British Pharmacopœia corre-



spond so nearly to the General Formula for Decoctions, it is unnecessary to repeat them here.

The following list embraces those official in the 1870 U. S. and the present British Pharmacopœia :

- Decoctum Aloes Compositum. Br.
- Decoctum Cetrariæ. U. S. (1870, 1880). Br.
- Decoctum Chimaphilæ. U. S. (1870).
- Decoctum Cinchonæ Flavæ. U. S. (1870). Br.
- Decoctum Cinchonæ Rubræ. U. S. (1870).
- Decoctum Cornûs Floridæ. U. S. (1870).
- Decoctum Dulcamaræ. U. S. (1870).
- Decoctum Granati Radicis. Br.
- Decoctum Hæmatoxyli. U. S. (1870). Br.
- Decoctum Hordei. U. S. (1870). Br.
- Decoctum Papaveris. Br.
- Decoctum Parieræ. Br.
- Decoctum Quercûs Albæ. U. S. (1870). Br.
- Decoctum Sarsæ. Br.
- Decoctum Sarsaparillæ Comp. U. S. (1870, 1880). Br.
- Decoctum Scoparii. Br.
- Decoctum Senegæ. U. S. (1870).
- Decoctum Taraxaci. Br.
- Decoctum Ulmi. Br.
- Decoctum Uva Ursi. U. S. (1870).

## ELIXIRS.

The 1880 Pharmacopœia contains but one lone formula to represent this large class of elegant preparations.

It seems strange that the committee of revision should have entirely ignored, and, by their silence, discountenanced a class of preparations that not only meet a public want, but that are so largely used and prescribed by physicians.

Elixirs are an Evolution—an advance movement, by which Pharmacy seeks to better its condition and make its relations with its patrons more pleasant. By the law of the survival of the fittest Elixirs *must* live. The public *demand* pleasant medicines; physicians *will* prescribe them, and pharmacists *must* furnish them. Why, then, have not the committee of revision considered the needs of pharmacists and physicians, and given us a set of formulas for at

least the long established and more important Elixirs and elegant preparations?

It is claimed that the committee have given the formula for a base—the Elixir Aurantii, or simple Elixir—and that the physician should prescribe whatever medication he may desire in combination with it. This is simply nonsense, as anyone can see at a glance. As well might the committee have given a formula for diluted alcohol and expected the physician to prescribe the constituents of whatever tincture he desired to use.

It is urged that Elixirs are the offspring of private enterprise and manufacturing aggrandizement, and therefore are not worthy the notice of the learned committee; but, let us ask, have not most of the officinal formulæ descended from the favorite prescriptions or compounds of physicians or dealers who have first used them for their individual benefit?

When we consider that Elixirs and that class of unofficial preparations are more largely used now than those which are sanctioned by the Pharmacopœia, it is indeed strange that no notice was taken of them in the late revision. This action, or rather lack of action, on the part of the committee, forces druggists, who *must* have these preparations, either to buy them of manufacturers or make them from such unofficial formulæ as they may choose.

As they are as easily made as ordinary tinctures, and the difference between making and buying is from 200 to 400 per cent. in favor of making, most all druggists prefer to make them if they have reliable formulæ for so doing. FENNER'S FORMULARY is acknowledged as the *standard* authority for making this class of preparations, as its formulæ are simple, expedient and efficient, making preparations similar to those of the leading manufacturers, whose goods have established the reputation of these elegant products.

As this article is intended only as a comparison of the 1870 and 1880 Pharmacopœias, detailed formulæ for Elixirs are not given. Subscribers wishing such formulæ are referred to FENNER'S FORMULARY.

## ELIXIR AURANTII.

*Elixir of Orange—Simple Elixir.*

U. S. P. 1880.

Oil of Orange, by weight,	1 part.
Cotton, “	2 parts.
Sugar, “	100 parts.
Alcohol, “	
Water, each a sufficient quantity to make	300 parts.

“ Mix Alcohol and Water in the proportion of one part (by weight) of Alcohol to three parts (by weight) of Water. Add the Oil of Orange to the Cotton in small portions at a time, distributing it thoroughly by picking the Cotton apart after each addition; then pack tightly in a conical percolator, and gradually pour on the mixture of Alcohol and Water until 200 parts (by weight) of filtered liquid are obtained. In this liquid dissolve the sugar, by agitation, without heat, and strain.”

This is the only formulæ for an Elixir of any kind in the 1880 Pharmacopœia; in the 1870 revision there are none whatever. We give below a few general formulæ for making Elixirs:

## ELIXIRS OF SOLUBLE SUBSTANCES,

Like Bromide of Potassium, the soluble Salts of Iron, Quinine, Valerianate of Ammonium, etc., are made by dissolving the Salts in the proper proportions and combinations in a simple Elixir. They are very easily made, and, if a fine simple Elixir is used, and the ingredients properly combined, the results are very pleasing to the pharmacist and his customers.

## ELIXIRS OF DRUGS,

Of which it is required to obtain the strength, may be percolated with Alcohol and Water mixed in the same proportion as in the Simple Elixir, and when the strength is obtained the proper amount of Sugar and Prepared Flavoring may be added to complete the preparation.

## ELIXIRS OF DRUGS BY WATER-BATH PERCOLATION.

For the benefit of subscribers who have Fenner's Formulary, the method of making elixirs of drugs requiring

percolation is herewith given for making by water-bath percolation.

The substance, or substances, directed	
to be percolated,	as directed.
Percolating Menstruum,	as directed.
Sugar,	as directed.
Prepared Flavoring,	as directed.

Moisten the drugs with a sufficient quantity of Percolating Menstruum, and pack firmly in the water-bath percolator. Pour upon them the required amount of Percolating Menstruum, and, after standing twenty-four hours or longer in a warm place, heat moderately, and after one hour, begin to percolate, adding Percolating Menstruum, and continuing the heat and percolation until the required amount is obtained. To this add the proper amount of Sugar and Prepared Flavoring as directed, and filter.

## EMPLASTRA — PLASTERS.

Old English Pharmacists all know how to make and spread Plasters. Young American Pharmacists know but little about them. The plaster iron can hardly be found in one drug store in a hundred in this country. The reason is, that large manufacturers with improved machinery have monopolized the plaster business, and saved the druggist much disagreeable and tedious work. It seems almost needless to give formulæ for plasters, but as they come in the line of Pharmacopœia preparations, they are here recorded.

The following plasters are added or omitted in the 1880 revision :

ADDED.	OMITTED.
Emplastrum Capsici,	Emplastrum Aconiti.
Emplastrum Ichthyocollæ.	Emplastrum Antimonii.

### EMPLASTRUM ACONITI.

#### *Aconite Plaster.*

This plaster was officinal in the 1870 revision (which see). It can be made, if desired, by water-bath percolation instead of ordinary percolation as directed in the U. S. P. 1870, by following the same general directions.

## EMPLASTRUM AMMONIACI.

*Ammoniac Plaster.*

	1870.	1880.
Ammoniac,	5 troyounces.	5 ounces.
Diluted Acetic Acid,	8 fluidounces.	7 ounces.

Digest the Ammoniac in the Diluted Acetic Acid until it is entirely emulsionized; then strain and evaporate by means of a water-bath, stirring constantly until a small portion taken from the vessel hardens on cooling.

## EMPLASTRUM AMMONIACI CUM HYDRARGYRO.

*Ammoniac Plaster with Mercury.*

	1870.
Ammoniac,	12 troyounces.
Mercury,	3 troyounces.
Olive Oil,	60 grains.
Sublimed Sulphur,	8 grains.
See directions for making.	

	1880.
Ammoniac,	4 ounces av.
Mercury,	1 ounce av.
Olive Oil,	19 grains.
Sublimed Sulphur,	2½ grains.
Diluted Acetic Acid,	5⅓ fl.ounces.
Lead Plaster, a sufficient quantity.	

“Digest the Ammoniac in the Diluted Acetic Acid in a suitable vessel, avoiding contact with metals until it is entirely emulsionized; then strain and evaporate the strained liquid by means of a water-bath, stirring constantly until a small portion taken from the vessel hardens on cooling. Heat the Olive Oil, and gradually add the Sulphur, stirring constantly until they unite; then add the Mercury, and triturate until globules of the metal cease to be visible. Next, add gradually the Ammoniac, while yet hot, and, finally, having added enough Lead Plaster previously melted by means of a water-bath to make the mixture weigh 5½ ounces avoird., mix the whole thoroughly.”

## EMPLASTRUM ARNICÆ.

*Arnica Plaster.*

	1880.
Extract of Arnica Root,	1 ounce.
Resin Plaster,	2 ounces.

“Add the extract to the Plaster previously melted by means of a water-bath, and mix them thoroughly.”

The difference between the 1870 and 1880 preparation is, that in the 1870 revision the Extract of Arnica is made from the flowers, while in the 1880 revision it is made from the root.

## EMPLASTRUM ASAFETIDÆ.

### *Asafetida Plaster.*

	1870.	1880.
Asafetida,	3½ tr.ounces.	3½ ounces av.
Lead Plaster,	3½ tr.ounces.	3½ ounces av.
Galbanum,	1¾ tr.ounces.	1½ ounces av.
Yellow Wax,	1¾ tr.ounces.	1½ ounces av.
Alcohol,	14 fl.ounces.	14 fl.ounces.

Digest the gums with the Alcohol on a water-bath, and strain while hot; evaporate to the consistence of honey; then add the Lead Plaster and Wax previously melted together, stir the mixture well, and evaporate to the proper consistence.

Observe that one s is omitted in spelling Asafetida.

## EMPLASTRUM BELLADONNÆ.

### *Belladonna Plaster.*

#### MADE BY WATER-BATH PERCOLATION.

As the proportions of the ingredients and the process for making are essentially the same in both the 1870 and 1880 Pharmacopœias, we give the more expedient and economical process of making it by water-bath percolation.

Belladonnæ Root, in No. 60 powder, 16 ounces avoird.  
Alcohol,  
Resin Plaster, each a sufficient quantity.

Moisten the powder with 6 fluidounces of Alcohol and pack firmly in the water-bath percolator, pour 10 fluidounces of Alcohol upon it and set in a warm place for two days; then heat moderately, and after one hour begin to percolate, adding Alcohol to the drug, and continuing the percolation and heat until two pints of the tincture have passed. Distill off a pint and a half of Alcohol, and evaporate the remainder on a water-bath, at a temperature not exceeding 50° C. (122° F.) to a soft Extract, add to this enough Resin

Plaster previously melted to make, with the Extract, 16 ounces av., and mix them thoroughly.

The Alcohol remaining in the drug after percolation may be recovered by distillation.

## EMPLASTRUM CAPSICI.

### *Capsicum Plaster.*

This is a new officinal of the 1880 Pharmacopœia, and is made by first spreading Resin Plaster upon muslin and then brushing it over with a thin coating of Oleoresin of Capsicum, leaving a narrow blank margin along the edges.

## EMPLASTRUM FERRI.

### *Iron Plaster, "Strengthening Plaster."*

1870.

Subcarbonate of Iron,	1 ounce.
Lead Plaster,	8 ounces.
Burgundy Pitch,	2 ounces.

"To the Lead Plaster and Pitch previously melted together, add the Iron and stir constantly until the mixture thickens on cooling."

1880.

Hydrated Oxide of Iron, dried at a temperature not exceeding 80°C. (176°F.)	1 ounce.
Canada Turpentine (Balsam Fir),	1 ounce.
Burgundy Pitch,	1 ounce.
Lead Plaster,	7 ounces.

"Melt the Lead Plaster, Balsam and Pitch by means of a water-bath; then add the Oxide of Iron and stir constantly until the mixture thickens on cooling."

## EMPLASTRUM GALBANI.

### *Galbanum Plaster.*

(Compound Galbanum Plaster, 1870).

	1870.	1880.
Galbanum,	8 ounces.	8 ounces.
Turpentine (White Pine Gum),	1 ounce.	1 ounce.
Burgundy Pitch,	3 ounces.	3 ounces.
Lead Plaster,	36 ounces.	38 ounces.



“To the Galbanum and Turpentine previously melted together and strained, add first the Burgundy Pitch, then the Lead Plaster melted over a gentle fire and mix the whole thoroughly.”

### EMPLASTRUM HYDRARGYRI.

#### *Mercurial Plaster.*

	1870.	1880.
Mercury by weight,	3 ounces.	3 ounces.
Olive Oil by weight,	1 ounce.	1 ounce.
Resin,	1 ounce.	1 ounce.
Lead Plaster,	6 ounces.	5 ounces.

“Melt the Oil and Resin together and when they have become cool rub the Mercury with it until globules of the metal cease to be visible. Then gradually add the Lead Plaster previously melted and mix the whole thoroughly together.”

### EMPLASTRUM ICHTHYOCOLLÆ.

#### *Isinglass Plaster—Court Plaster.*

1880.

This new officinal preparation is made by dissolving 10 parts of Isinglass in enough hot water to make 120 parts; one-half of this solution is then spread in successive layers, with a brush, upon taffeta stretched on a level surface;—the remainder of the solution is then mixed with 40 parts of Alcohol and 1 part of Glycerin, and the taffeta is again varnished with the solution as before; then, to make water-proof, the reverse side of the taffeta is varnished with Tincture Benzoin.

### EMPLASTRUM OPII,

#### *Opium Plaster.*

	1870.	1880.
Extract of Opium,	1 ounce.	1 ounce.
Burgundy Pitch,	3 ounces.	3 ounces.
Lead Plaster,	12 ounces.	12 $\frac{2}{3}$ ounces.
Water,	sufficient.	1 $\frac{1}{3}$ ounces.

“Rub the Extract of Opium with the Water until uniformly soft and add to it the Pitch and Lead Plaster, melted together by means of a water-bath; then continue

the heat for a short time, stirring constantly until the moisture is evaporated."

### EMPLASTRUM PICIS BURGUNDICÆ.

#### *Burgundy Pitch Plaster.*

	1870.	1880.
Burgundy Pitch,	12 ounces.	9 ounces.
Yellow Wax,	1 ounce.	1 ounce.

"Melt them together, strain the mixture and stir constantly until it thickens on cooling."

### EMPLASTRUM PICIS CANADENSIS.

#### *Canada Pitch Plaster, Hemlock Pitch Plaster.*

	1870.	1880.
Canada Pitch (Hemlock Gum),	12 ounces.	9 ounces.
Yellow Wax,	1 ounce.	1 ounce.

"Melt them together, strain the mixture and stir constantly until it thickens on cooling."

### EMPLASTRUM PICIS CUM CANTHARIDE.

#### *Pitch Plaster with Cantharides, Warming Plaster.*

	1870.	1880.
Burgundy Pitch,	12 ounces.	11 1/2 ounces.
Cerate of Cantharides,	1 ounce.	1 ounce.

"Heat the Cerate as nearly as possible to 100° C. (212° F.) on a Water-bath, and having continued the heat for 15 minutes strain it through a close strainer, which will retain the Cantharides. To the strained liquid add the Pitch, melt them together by means of the Water-bath, and having removed the heat, stir the mixture constantly until it thickens."

It would have been better had the Pharmacopœia directed Cerate of Extract of Cantharides in this preparation.

### EMPLASTRUM PLUMBI.

#### *Lead Plaster, Diachylon Plaster.*

	1870.	1880.
Oxide of Lead (Litharge), in very fine powder,	7 1/2 ounces.	8 ounces.
Olive Oil, by weight,	14 ounces.	15 ounces.
Water,	a sufficient quantity.	

"Rub the Oxide of Lead with about one-half of the Olive

Oil and add the mixture to the remainder of the Oil contained in a suitable vessel of a capacity equal to three times the bulk of the ingredients. Then add about 4 ounces of boiling water and boil the whole together until a homogeneous plaster is formed, adding from time to time during the process a little Water as that first added is evaporated."

As Lead Plaster is the base, so to speak, of nearly all the other plasters, it should be kept on hand, even by druggists, who seldom have to prepare plasters.

### EMPLASTRUM RESINÆ.

#### *Resin Plaster, Adhesive Plaster.*

1870.	1880.
Resin, in fine powder, 1 oz.	Resin, in fine powder, $\frac{7}{8}$ oz.
Lead Plaster, 6 oz.	Lead Plaster, 5 oz.
"To the Lead Plaster, melted over a gentle fire, add the Resin and mix them."	Yellow Wax, $\frac{3}{8}$ oz.
	"To the Lead Plaster and Wax, melted together over a gentle fire, add the Resin and mix them."

### EMPLASTRUM SAPONIS.

#### *Soap Plaster.*

This formula has exactly the same proportions of the ingredients in both revisions, viz.:

Soap, white (hard or common bar soap),	1 ounce.
Lead Plaster,	9 ounces.
Water,	sufficient.

"Rub the Soap with Water until brought to a semi-liquid state; then mix it with the Lead Plaster, previously melted, and evaporate to the proper consistence."

### EMULSIONS.

Although Emulsiones are not noticed in the Pharmacopœia, they are much more frequently prescribed and used than many of the official preparations, and it seems only fitting that general directions for making them should be given here.

Any druggist can make a good and permanent Emulsion by using good material and carefully following the general directions; and it seems needless for pharmacists to depend upon manufacturers for these preparations which they can

so readily make themselves. Full directions and formulæ for making all the various combinations furnished by manufacturers, will be found in FENNER'S FORMULARY.

#### GENERAL DIRECTIONS FOR MAKING EMULSIONS.

Best Gum Arabic, in fine powder,  $1\frac{1}{2}$  ounces, avoird.

The required Oil, 8 fl. ounces.

Glycerin, 2 fl. ounces.

Flavoring Oils,

Other ingredients as directed,

Water enough to make a pint.

To make the Emulsion, choose a mortar that will hold double the amount of the Emulsion desired to be made, and a pestle with a large flattened head. See that the mortar and pestle are perfectly dry, then put the Powdered Gum Arabic in the mortar and gradually add  $2\frac{1}{2}$  fluid-ounces of Water, rubbing the Gum with it to a smooth paste. Let it stand for a few moments in order that the Gum may all be dissolved; then, having rubbed it well around the sides of the mortar, begin to add the Oil, by pouring it very slowly from a bottle, and constantly rubbing it with the Solution of Gum as it falls into the mortar. This will form a thick, pasty mass, which should get thicker as more oil is added. If the oil does not combine as rapidly as added, stop pouring it in for a moment, until the mixture in the mortar is homogeneous. The Oil should be more slowly added as the operation proceeds. When all the Oil is added the mass should be of a thick, white, pasty consistence, having no globules of oil visible. The Flavoring Oils should then be added and the Glycerin incorporated with the mass by rubbing.

If any Salts are to be incorporated with the Emulsion, they should, if soluble, be dissolved by rubbing with about three ounces of water, and this solution, then gradually incorporated with the pasty mass in the mortar by rubbing until perfectly smooth and uniform. The Emulsion may then be poured in a bottle and the mortar rinsed with enough water to make up the required measure; this to be added to the contents of the bottle and well shaken. If the Salts or substances are insoluble they should be reduced to a very fine powder and mixed with the mass in the mortar, and then enough water incorporated with the mixture to complete the emulsion. If solutions are to be added they should be mixed with the proper amount of water before incorporating.

If these simple directions are followed no trouble will be experienced in making Emulsions.

## EXTRACTA—EXTRACTS.

It is difficult to get accustomed to the strict alphabetical arrangement of the new Pharmacopœia, which mixes solid and fluid extracts all together. No advantage can be claimed for the change, and it is certainly not as convenient as the former revisions which placed them under separate headings.

In this article, therefore, the older arrangement will be adhered to, and the solid extracts will be classed under the head of "Extracta," and the fluid extracts under the head of "Extracta Fluida."

As the object of the formulæ is to secure the most efficient preparations in the most economical way, no attempt will be made to follow the process of the Pharmacopœia, because we *know* that water-bath percolation will make a better solid or fluid extract, at less expense and with less outlay of time and trouble, than the Pharmacopœia method. The official proportions of the ingredients will, however, be as nearly adhered to as is practicable.

But little use is now made of solid extracts by retail druggists, compared with former time. Manufacturers have mostly monopolized the making of pills and plasters, which were the articles for which they were chiefly used. Of late "powdered extracts," which are furnished by manufacturers, are mostly employed in prescriptions for pills and powders, because of their superior convenience. Taking it altogether the retail druggist does not probably buy or use one pound of solid extract, where they bought twenty pounds fifteen years ago.

Of the Pharmacopœia extracts, nine new ones have been added to the list and twelve deleted that were officinal in the 1870 revision.

The following are the changes:

ADDED.	OMITTED.
Extractum Aloes Aquosum.	Extractum Arnicæ (flowers).
Extractum Arnicæ Radicis.	Extractum Belladonnæ.
Extractum Conii Alcoholicum (from the fruit).	Extractum Cannabis Americanæ.
Extractum Ergotæ.	Extractum Conii (from the leaves).
Extractum Glycyrrhizæ Purum.	Extractum Conii Alcoholicum.
Extractum Iridis.	Extractum Dulcamaræ.
Extractum Leptandrzæ.	Extractum Hellebori.
Extractum Malti.	Extractum Hyoscyami.
Extractum Mezerei.	Extractum Ignatiæ.
	Extractum Jalapæ.
	Extractum Senegzæ.
	Extractum Valerianæ.

## EXTRACTS BY WATER-BATH PERCOLATION.

The formulæ which follow are only for such extracts as are officinal in the U. S. Pharmacopœia, but extracts may be made from any other drugs in the same general manner; using the menstruum for preparing them that is best adapted to extract the valuable medicinal agents.

## EXTRACTUM ACONITI.

*Extract of Aconite.*

Aconite (root), in No. 60 powder,	16 ounces.
Tartaric Acid,	30 grains.
Glycerin,	
Alcohol, each, a sufficient quantity.	

Moisten the drug with six ounces of Alcohol and pack very firmly in the water-bath percolator. Pour upon it 10 ounces of Alcohol and set in a warm place for two days; then heat moderately and after one hour begin to percolate, adding Alcohol to the drug and continuing the heat and percolation until the drug is exhausted or until three pints have passed. Distill off  $2\frac{1}{2}$  pints of Alcohol by means of a water-bath and still, and, after adding the Tartaric Acid to the remainder, evaporate it by means of a water-bath at a temperature not exceeding  $50^{\circ}\text{C}$ . ( $122^{\circ}\text{F}$ .) to an extract of pilular consistence. To this, while still warm, add five per cent. by weight of Glycerin, and incorporate it thoroughly with the extract. The Alcohol remaining in the drug after percolation may be recovered by distillation.

## EXTRACTUM ALOES AQUOSUM.

*Aqueous Extract of Aloes.*

Aloes,	4 ounces.
Boiling Distilled Water,	40 ounces.

Mix the Aloes with the Water, and having first covered the perforated diaphragm of the water-bath percolator with

a piece of burlap, pour the mixture carefully upon it. Keep at a moderate heat for two hours without agitation, and then draw off the liquid by the stopcock, filter and evaporate to dryness by steam or water-bath.

### EXTRACTUM ARNICÆ RADICIS.

#### *Extract of Arnica Root.*

Arnica Root, in No. 60 Powder,           16 ounces.  
Glycerin,  
Diluted Alcohol, each, a sufficient quantity.

Moisten the drug with six ounces of Diluted Alcohol and pack firmly in the water-bath percolator. Pour upon it 10 ounces of Diluted Alcohol and set in a warm place for two days; then heat moderately and after one hour begin to percolate, adding Diluted Alcohol to the drug and continuing the percolation and heat until two pints have passed. Evaporate this by distillation to a pint, and then by open evaporation upon the water-bath to the consistency of a solid extract. To this, while still warm, add five per cent. of Glycerin and incorporate it thoroughly.

This differs from the 1870 preparation by being made from the root instead of the flowers of Arnica.

### EXTRACTUM BELLADONNÆ ALCOHOLICUM.

#### *Alcoholic Extract of Belladonna.*

Belladonna Leaves, in No. 60 powder,   16 ounces av.  
Alcohol,                                       2 pints.  
Water,  
Glycerin, each, a sufficient quantity.

Moisten the drug with eight ounces of Alcohol and pack firmly in the water-bath percolator. Pour a pint of Alcohol upon it and set in a warm place for two days; then heat very moderately, and after one hour begin to percolate. When it will no longer drop remove from the fire, and, having mixed the remaining eight ounces of Alcohol with a pint of Water pour it upon the drug and continue the percolation until a pint and a half of the percolate has been received. Set this aside and continue the percolation, adding water to the drug until a pint more has passed. Distill 20 ounces of Alcohol, by the water-bath and still, from the



first portion of the percolate reserved, and, having evaporated the last portion of the percolate to the consistence of a solid extract, mix them together and evaporate to a pilular consistence by means of a water-bath. To this, while still warm, add five per cent. by weight of Glycerin, and mix.

The Extract of Belladonna of the 1870 Pharmacopœia was really an inspissated juice of fresh Belladonna Leaves, and has no counterpart in the present revision.

## EXTRACTUM CANNABIS INDICÆ.

### *Extract of Indian Cannabis.*

Indian Cannabis (Indian Hemp), in No. 20  
powder, 16 ounces.  
Alcohol, a sufficient quantity.

Moisten the drug with seven ounces of Alcohol and pack very firmly in the water-bath percolator. Pour upon it a pint of Alcohol and set in a warm place for two days; then heat very moderately and after one hour begin to percolate, adding Alcohol to the drug and continuing the heat and percolation until 40 fluid ounces have passed. Distill off two pints of Alcohol by means of the water-bath and still, and evaporate the remainder on the water-bath at a heat not exceeding 50° C (122° F.), to a pilular consistence.

## EXTRACTUM CINCHONÆ.

### *Extract of Cinchona.*

Yellow Cinchona (Calisaya Bark), in  
No. 60 powder, 16 ounces av.  
Alcohol, 2 pints.  
Water,  
Glycerin, each, a sufficient quantity.

Moisten the drug with six ounces of Alcohol and pack firmly in the water-bath percolator. Mix the remainder of the Alcohol with a pint of Water and pour a pint of the mixture upon the drug; set in a warm place for two days, then heat moderately, and, after an hour, begin to percolate, adding the remainder of the mixed Alcohol and Water to the drug after the portion covering the drug has disappeared. Continue the heat and percolation until the percolate no

longer drops, then distill off the Alcohol from the tincture by means of a water-bath and still, and evaporate the residue to the consistence of a solid extract on a water-bath. To this add five per cent. of its weight of Glycerin and mix thoroughly

## EXTRACTUM COLCHICI RADICIS.

### *Extract of Colchicum Root.*

Colchicum Root, in No. 60 powder,   16 ounces av.  
Acetic Acid,                               5 fluid ounces.  
Water, a sufficient quantity.

Mix the Acid with 20 ounces of Water and moisten the powder with six ounces of the mixture. Pack rather loosely in the water-bath percolator and pour upon it the remainder of the mixture. After standing four hours heat very moderately, and after one hour begin to percolate, adding Water to the drug after the liquid has disappeared from its surface, and continuing the percolation without further heat until 30 ounces have passed. Evaporate this by means of a water-bath at a temperature not exceeding 80°C. (176° F.) to a pilular consistence.

## EXTRACTUM COLOCYNTHIDIS.

### *Extract of Colocynth.*

Colocynth (Bitter Apple), deprived of its  
seeds, in coarse powder,                               16 ounces.  
Diluted Alcohol, a sufficient quantity.

Moisten the powder with eight ounces of Diluted Alcohol, and, after standing for 24 hours in a covered vessel, pack loosely in the water-bath percolator. Pour upon it a pint of Diluted Alcohol and set in a warm place for one day; then heat moderately, and after one hour begin to percolate, adding Diluted Alcohol to the drug, and continuing the heat and percolation until 3½ pints of the tincture have passed. Distill off 1½ pints of Alcohol by the water-bath and still, and evaporate the remainder by the water-bath to dryness. Lastly, reduce to a powder and keep in well-stopped bottles.

## EXTRACTUM COLOCYNTHIDIS COMPOSITUM.

*Compound Extract of Colocynth.*

Extract of Colocynth,	8 ounces.
Aloes,	25 ounces.
Cardamom, in No. 60 powder,	3 ounces.
Resin of Scammony, in fine powder,	7 ounces.
Soap, dried and in coarse powder,	7 ounces.
Alcohol,	5 ounces.

Melt the Aloes on a water-bath; then add the Alcohol, and, having stirred the mixture thoroughly, strain it through a fine sieve, which has just been dipped into boiling water. To the strained mixture contained in a suitable vessel add the Soap, Extract of Colocynth and Resin of Scammony, and heat the mixture not exceeding 120° C. (248° F.) until it is perfectly homogeneous, and a thread taken from the mass becomes brittle when cool. Then remove from the heat, add the Cardamom, incorporate it thoroughly, and cover the vessel closely until the contents are cool. Lastly, powder the extract, and keep in well-stopped bottles.

## EXTRACTUM CONII ALCOHOLICUM.

*Alcoholic Extract of Conium.*

Conium (fruit), in No. 40 powder,	16 ounces.
Diluted Hydrochloric Acid (by weight),	½ ounce.
Glycerin,	
Diluted Alcohol, each,	a sufficient quantity.

Moisten the drug with 6 ounces of Diluted Alcohol and pack moderately in the water-bath percolator. Pour upon it 10 ounces of Diluted Alcohol and set in a warm place for two days; then heat moderately, and after one hour begin to percolate, adding Diluted Alcohol to the drug, and continuing the heat and percolation until 2½ pints of the tincture have passed. Distill off 20 fluidounces of Alcohol, by means of the water-bath and still, and after adding the Hydrochloric Acid, evaporate the remainder by water-bath, at a temperature not exceeding 50° C. (122° F.), to a pilular consistence. To this, while still warm, add 5 % of its weight of Glycerin, and mix them thoroughly.

The 1870 Pharmacopœia directed the leaves of Conium instead of the fruit as is now required. Extract of Conium

which was officinal in the 1870 revision has been omitted. It was, like Extract of Belladonna, an inspissated juice made from the fresh Conium leaves.

## EXTRACTUM DIGITALIS.

### *Extract of Digitalis.*

Digitalis, recently dried, in No. 60 powder, 16 ounces av.  
Alcohol, 2 pints.  
Water,  
Glycerin, each, a sufficient quantity.

Moisten the drug with 8 ounces of Alcohol, and pack firmly in the Water-bath Percolator; mix the remainder of the Alcohol with a pint of Water, and pour a pint of the mixture upon the drug; set in a warm place for two days; then heat very moderately, and after one hour begin to percolate, adding the remaining portion of the mixed Alcohol and Water, and, after that has been used, Water to complete the percolation. Continue the heat and percolation until  $2\frac{1}{2}$  pints of the tincture have passed. Distill off 30 fluidounces of Alcohol and evaporate the remainder by means of a water-bath to a pilular consistence, and, while still warm, add 5 per cent. of its weight of Glycerin, and mix thoroughly.

## EXTRACTUM ERGOTÆ.

### *Extract of Ergot.*

The 1880 Pharmacopœia introduces this preparation, which is made by evaporating 5 parts of fluid extract of Ergot to 1 part, by means of a water-bath at a temperature not exceeding 50° C. (122° F.). This makes an extract of semi-solid consistence.

## EXTRACTUM ENONYMI.

### *Extract of Enonymus (Wahoo).*

Enonymus (Wahoo Bark), in No. 30 powder, 16 ounces.  
Glycerin,  
Diluted Alcohol, each, a sufficient quantity.

Moisten the drug with 6 ounces of Diluted Alcohol

and pack firmly in the water-bath percolator ; pour upon it a pint of Diluted Alcohol, and set in a warm place for two days ; then heat moderately, and after one hour begin to percolate, adding Diluted Alcohol to the drug and continuing the heat and percolation until  $2\frac{1}{2}$  pints of the tincture have passed. Distill off 20 fluidounces of Alcohol and evaporate the remainder by means of the water-bath to a pilular consistence. To this, while still warm, add 5 per cent. of its weight of Glycerin and mix thoroughly.

### EXTRACTUM GENTIANÆ.

#### *Extract of Gentian.*

Gentian, in No. 20 powder,	16 ounces.
Water, a sufficient quantity.	

Moisten the Gentian with 8 ounces of Water and let it remain in a covered vessel for 12 hours ; then pack moderately in the water-bath percolator, and pour 2 pints of Water upon it. Heat moderately, and after one hour, begin to percolate, adding water, and continuing the heat until it is exhausted. Evaporate the percolate by boiling to a pint and strain ; then, by means of a water-bath, evaporate to a pilular consistence.

### EXTRACTUM GLYCYRRHIZÆ PURUM.

#### *Pure Extract of Liquorice.*

Liquorice Root, in No. 20 powder,	16 ounces avoird.
Water of Ammonia,	$2\frac{1}{4}$ fluidounces.
Distilled Water, a sufficient quantity.	

Mix the Water of Ammonia with 2 pints of Distilled Water ; moisten the drug with 8 ounces of the mixture, and allow to macerate in a covered vessel for 24 hours ; then pack moderately in the water-bath percolator and pour the remainder of the mixture upon it. Heat moderately, and after one hour begin to percolate, adding water to the drug, and continuing the heat and percolation until the drug is exhausted. Evaporate the liquid by means of a water-bath to a pilular consistence.

## EXTRACT HÆMATOXYLI.

*Extract of Logwood.*

This preparation is made by macerating rasped or ground Logwood with 10 times its weight of Water for 48 hours ; then boiling down to one half, straining and evaporating the strained liquid to dryness.

It may be made by water-bath percolation in the same manner as other infusions, but as it is so cheap it is seldom made by druggists.

## EXTRACTUM HYOSCYAMI ALCOHOLICUM.

*Alcoholic Extract of Hyoscyamus.*

Hyoscyamus, recently dried and	
in No. 20 powder,	16 ounces avoird.
Alcohol,	2 pints.
Water, a sufficient quantity.	

Moisten the drug with 8 ounces of Alcohol and pack firmly in the water-bath percolator. Mix the remaining Alcohol with a pint of Water, and pour a pint of the mixture upon the drug ; set in a warm place for two days ; then heat very moderately, and after one hour begin to percolate, adding the remainder of the mixture to the drug after the menstruum has disappeared from the surface, and then enough Water to complete the percolation. Continue the heat and percolation until 3 pints of the tincture have passed. Distill off two pints of Alcohol and then evaporate the remainder on the water-bath at a temperature not exceeding 50° C. (122° F.) to a pilular consistence.

## EXTRACTUM IRIDIS.

*Extract of Iris (Blue Flag).*

Iris (Blue Flag Root), in No. 60 powder,	16 ounces av.
Alcohol,	2 pints.
Water,	½ pint.
Diluted Alcohol, a sufficient quantity.	

Moisten the drug with six ounces of Alcohol and pack firmly in the water-bath percolator ; mix the remainder of

the Alcohol with the Water, and pour upon the drug; set in a warm place for one day; then heat moderately, and after one hour begin to percolate, adding Diluted Alcohol, and continuing the heat and percolation until  $2\frac{1}{2}$  pints have passed. Distill off two pints of the Alcohol and evaporate the remainder by means of a Water-bath to a pilular consistence.

### EXTRACTUM JUGLANDIS.

#### *Extract of Juglans (Butternut Bark).*

Butternut Bark (of root), in No. 30  
powder, 16 ounces.  
Alcohol,  
Glycerin, each, a sufficient quantity.

Moisten the drug with 6 ounces of Alcohol and pack firmly in the water-bath percolator; pour upon it a pint of Alcohol and set in a warm place for two days; then heat moderately, and after one hour begin to percolate, adding Alcohol to the drug and continuing the heat and percolation until  $2\frac{1}{2}$  pints have passed. Distill off 36 fluidounces of Alcohol and evaporate the remainder on a water-bath to a pilular consistence. To this, while still warm, add 5 per cent. of its weight of Glycerin and incorporate thoroughly.

The Alcohol remaining in the drug after percolation may be recovered by distillation.

### EXTRACT KRAMERIÆ.

#### *Extract of Krameria (Rhatany).*

Krameria, in No. 30 powder, 16 ounces.  
Water, a sufficient quantity.

Moisten the powder with 6 ounces of Water and pack firmly in the water-bath percolator; pour upon it a pint of Water and set in a warm place for four hours; then heat, and after one hour begin to percolate, adding Water to the drug and continuing the heat and percolation until the strength of the drug is exhausted.

Heat the percolate to boiling and strain, then evaporate the strained liquid on a water-bath, at a heat not exceeding  $78^{\circ}$  C. ( $158^{\circ}$  F.), to dryness.



## EXTRACTUM LEPTANDRÆ.

*Extract of Leptandra.*

Leptandra (Culver's Root), in No.  
40 powder, 16 ounces avoird.  
Alcohol, 2 pints.  
Water,  
Glycerin, each, a sufficient quantity.

Moisten the drug with 6 ounces of Alcohol and pack firmly in the water-bath percolator; mix the remaining Alcohol with a pint of Water and pour a pint of the mixture upon the drug; set in a warm place for two days; then heat moderately and after one hour begin to percolate, adding the remainder of the mixed Alcohol and Water to the drug, then enough Water to complete the percolation. Continue the heat and percolation until 3 pints of the percolate have passed. Distill off two pints of Alcohol and evaporate the remainder, by means of a water-bath, to a pilular consistence. To this add 5 per cent. of its weight of Glycerin and incorporate thoroughly.

## EXTRACTUM MALTI.

*Extract of Malt.*

Malt, ground coarse,  
Water, each, a sufficient quantity.

To each pound of the Malt take one-half pint of Water and moisten by stirring with it; pack moderately in the water-bath percolator and pour upon it a pint of Water for each pound of the Malt taken; then heat at once to about 50° C. (122° F.) and keep at that temperature for two hours; then heat to about 60° C. (140° F.) and begin to percolate, adding Water, heated to about 30° C. (86° F.), and continuing the heat and percolation as long as the percolate has a sweet taste. As the percolate is received it must be at once evaporated (while still hot) on a water-bath at a temperature not exceeding 60° C. (140° F.) and the evaporation continued until all the percolate is reduced to the consistency of thick syrup or honey. This is then to be strained while hot and kept in well-stopped bottles in a cool place.

To preserve the Diastase and make a preparation which will not "sour" or ferment, the above directions must be strictly followed. If the percolate is allowed to cool before

evaporating, or if the temperature during percolation or evaporation varies greatly from the directions, the resulting preparation will be of much less value.

Full directions for making Malt Extract and its various combinations will be found in FENNER'S FORMULARY.

Malt yields from 20 to 25 per cent. of Extract.

## EXTRACTUM MEZEREI.

### *Extract of Mezereum.*

Mezereum, in No. 30 powder,                      16 ounces.  
Alcohol, a sufficient quantity.

Moisten the drug with 6 ounces of Alcohol and pack firmly in the water-bath percolator; pour upon it a pint of Alcohol and set in a warm place for two days; then heat very moderately, and after one hour begin to percolate, adding Alcohol to the drug and continuing the heat and percolation until  $2\frac{1}{2}$  pints have passed. Distill off 36 ounces of Alcohol and evaporate the remainder, by means of a water-bath, to a pilular consistence.

The Alcohol remaining in the drug after percolation may be recovered by distillation.

## EXTRACTUM NUCIS VOMICÆ.

### *Extract of Nux Vomica.*

Nux Vomica, in No. 60 powder,                      16 ounces.  
Alcohol,  
Water, each, a sufficient quantity.

Mix Alcohol and Water in the proportion of 8 parts of Alcohol to 1 part of Water and moisten the drug with 8 ounces of the mixture; allow to remain in a covered vessel for 12 hours, then pack firmly in the water-bath percolator, pour upon it a pint of the mixture of Alcohol and Water and set in a warm place for two days; then heat moderately, and after one hour begin to percolate, adding the mixture of Alcohol and Water and continuing the heat and percolation until 3 pints of the percolate have passed. Distill off  $2\frac{1}{2}$  pints of Alcohol and evaporate the remainder by means of a water-bath to a pilular consistence.

The alcohol remaining in the drug after percolation may be recovered by distillation.

## EXTRACTUM OPII.

*Extract of Opium.*

Opium 16 ounces avoird.  
Water,  
Glycerin, each, a sufficient quantity.

Cut the Opium in small pieces and macerate it for 24 hours with a pint and a half of Water; then rub in a mortar to a pulpy mass, taking care that all the pieces of Opium are thoroughly desiccated. Having put a piece of burlap over the perforated diaphragm, pour the pulpy mass into the water-bath percolator and heat moderately, at once; after one hour begin to percolate, adding water to the drug and continuing the heat and percolation until the Opium is exhausted. Evaporate the percolate by means of a water-bath to a pilular consistence, then, while still warm, add 5 per cent. of its weight of Glycerin, and incorporate thoroughly.

## EXTRACTUM PHYSOSTIGMATIS.

*Extract of Physostigma (Calabar Bean).*

Physostigma, in No. 40 powder, 16 ounces.  
Alcohol, a sufficient quantity.

Moisten the powder with 6 ounces of Alcohol and pack firmly in the water-bath percolator; pour upon it a pint of Alcohol and set in a warm place for two days; then heat moderately, and after one hour begin to percolate, adding Alcohol to the drug and continuing the heat and percolation until three pints of the percolate have passed. Distill off 40 fluidounces of Alcohol and evaporate the remainder by means of a water-bath, at a temperature not exceeding 50° C. (122° F.), to a pilular consistence.

The Alcohol remaining in the drug after percolation may be recovered by distillation.

## EXTRACTUM PODOPHYLLI.

*Extract of Podophyllum (Mandrake).*

Mandrake Root, in No. 60 powder, 16 ounces.  
Alcohol,  
Water, each, a sufficient quantity.

Moisten the drug with 6 ounces of Alcohol and pack

firmly in the water-bath percolator; mix three parts of Alcohol with one part of Water and pour upon the drug a pint of the mixture; set in a warm place for two days; then heat moderately, and after one hour begin to percolate, adding the mixed Alcohol and Water to the drug and continuing the heat and percolation until three pints of the percolate have passed. Distill off  $2\frac{1}{4}$  pints of Alcohol and evaporate the remainder by means of a water-bath to a pilular consistence.

### EXTRACTUM QUASSIÆ.

#### *Extract of Quassia.*

Quassia, in No. 20 powder, 16 ounces.  
Glycerin,  
Water, each, a sufficient quantity.

Moisten the drug with 8 ounces of Water and pack firmly in the water-bath percolator; pour upon it a pint of Water and set in a warm place for two days; then heat moderately, and after one hour begin to percolate, adding Water to the drug and continuing the heat and percolation as long as the percolate is perceptibly bitter. Evaporate the percolate by boiling to one-half pint, then, by means of a water-bath, to a pilular consistence, and add to it, while still warm, five per cent. of its weight of Glycerin.

### EXTRACTUM RHEL.

#### *Extract of Rhubarb.*

Rhubarb, in No. 30 powder, 16 ounces.  
Alcohol,  
Water, each, a sufficient quantity.

Mix three parts of Alcohol with one part of Water and moisten the drug with 6 ounces of the mixture; pack moderately in the water-bath percolator and pour upon it a pint of the mixed Alcohol and Water; set in a warm place for one day; then heat moderately, and after one hour begin to percolate, adding the mixed Alcohol and Water to the drug and continuing the heat and percolation until three pints have passed. Distill off two pints of Alcohol and evaporate the remainder, on a water-bath, at a temperature not exceeding  $70^{\circ}$  C. ( $158^{\circ}$  F.), to a pilular consistence.

## EXTRACTUM STRAMONII.

*Extract of Stramonium.*

Stramonium Seed, in No. 40 powder, 16 ounces.  
Diluted Alcohol, a sufficient quantity.

Moisten the drug with 6 ounces of Diluted Alcohol and pack firmly in the water-bath percolator; pour upon it a pint of Diluted Alcohol and set in a warm place for two days; then heat moderately, and after one hour begin to percolate, adding Diluted Alcohol to the drug, and continuing the heat and percolation until  $2\frac{1}{2}$  pints have passed. Distill off a pint of Alcohol and evaporate the remainder by means of a water-bath, at a temperature not exceeding  $50^{\circ}$  C. ( $122^{\circ}$  F.), to a pilular consistence.

## EXTRACTUM TARAXACI.

*Extract of Taraxacum (Dandelion).*

Fresh Dandelion Root (gathered in September),  
Water, each a sufficient quantity.

Slice and chop the Dandelion Root and bruise it in a stone mortar, sprinkling on it a little Water until reduced to a pulp; then express and strain the juice and evaporate it by distillation on a water-bath to a pilular consistence.

This extract may also be made from the dried root, with a menstruum of three parts of Alcohol to one of Water, by water-bath percolation in the usual manner; but as the root loses much of its medicinal value when it is dried, it is recommended to make it from the fresh drug.

## EXTRACTUM VALERIANÆ.

*Extract of Valerian.*

Valerian Root, in No. 40 powder, 16 ounces.  
Alcohol,  
Water,  
Glycerin, each, a sufficient quantity.

Mix three parts of Alcohol with one part of water, and moisten the drug with 6 ounces of the mixture; pack in the water-bath percolator, and pour upon it a pint of the men-

struum; let stand in a warm place for two days; then heat very moderately, and after one hour begin to percolate, adding the mixed Alcohol and Water to the drug, and continuing the heat and percolation until  $2\frac{1}{2}$  pints of percolate have passed. Distill off 30 fluidounces of Alcohol and evaporate the remainder by means of a water-bath, at a temperature not exceeding  $50^{\circ}$  C. ( $122^{\circ}$  F.), to a pilular consistence; to this, while still warm, add 5 per cent. of its weight of Glycerin and mix thoroughly.

The Alcohol remaining in the drug after percolation may be recovered by distillation.

This extract is not official in the 1880 revision. It is claimed that the heat used to evaporate the percolate to a solid extract destroys its medicinal value. It is, however, as frequently used and prescribed as any of the solid extracts, and it seems unwise to have omitted a formula for its preparation.

### GENERAL FORMULA FOR EXTRACTS.

The foregoing formulæ for Extracts represent all that are at present officinal, but only a small portion of the solid or Pilular Extracts that are made and furnished by manufacturing pharmacists—one house, alone, quoting over 700 kinds.

It is impossible, of course (and it would be also useless), to give detailed formulæ for all Extracts in this work. The formulæ that are given here will represent the entire class, and will be a sufficient guide to the intelligent druggist in making any extract he may desire. As a general rule, the menstruum which is directed for making the fluid extract or tincture of the drug will be proper to use in making the solid or Pilular Extract.

The general directions which apply to making all the un-official Extracts may be briefly stated as follows:

The substance, any convenient quantity.

The menstruum, a sufficient quantity.

Moisten the drug with the menstruum, allow it to macerate from 12 to 24 hours, pack in the water-bath percolator, pour menstruum upon it and set in a warm place one or two days; then heat and percolate until the drug is exhausted, and evaporate the percolate by distillation or otherwise, by gentle heat, to a pilular consistence, adding 5 per cent. of Glycerin to such extracts as become hard or dry after standing.

Any solid Extract may be made by evaporating the fluid extract of the drug to a pilular consistence.

## EXTRACTA DESTILLATA.

*Distilled Extracts.*

No formulæ are given for distilled extracts in the Pharmacopœia; there are many drugs, however, the valuable medicinal properties of which consist of volatile principles which may be separated from the grosser or useless substances with which they are associated by distillation. But little attention has been paid by pharmacists to such galenicals, and they are here mentioned with the intention of stimulating practical research in this direction.

The favor with which the distilled extract of Witch Hazel has been received is well known, and there is no reason why many other distilled extracts should not be prepared and put before the notice of the public.

All drugs whose valuable medicinal properties are volatilized by the heat of boiling water, and do not consist of essential oils which rise to the surface when cool, may be used for distilled extracts to advantage.

For making these extracts a large low still without water-bath (the same as is described for making medicated waters by distillation) should be used. If the druggist does not have one of these stills, but has the water-bath percolator and still, that may be used by removing the percolator and stopping the hole through which the stop cock is attached, also the tube through which water is introduced into the water-bath, and proceeding as with the ordinary still. A wire cloth should be placed in the bottom of the boiler of the still to prevent the drug from too close contact with the heat.

A few formulæ only are given as samples, other distilled extracts may be prepared in the same general way.

## EXTRACTUM ARMORACIÆ DESTILLATUM

*Distilled Extract Horseradish.*

Horseradish Leaves, fresh,	2 pounds avoird.
Water,	30 fluidounces.
Alcohol,	5 fluidounces.

Bruise the leaves in a mortar and pour the Alcohol upon



them; put them in the still, without the water-bath, pour the water upon them, and distill a pint.

### EXTRACTUM BUCHU DESTILLATUM.

#### *Distilled Extract Buchu.*

Buchu Leaves,	1 pound avoird.
Water,	40 fluidounces.
Alcohol,	5 fluidounces.

Moisten the Buchu leaves with the Alcohol, and put them in the still without the water-bath; pour the water upon them and distill a pint.

### EXTRACTUM HAMAMELIDIS DESTILLATUM.

#### *Distilled Extract Witch Hazel.*

Witch Hazel Leaves, fresh,	2 pounds avoird.
Water,	30 fluidounces.
Alcohol,	5 fluidounces.

Bruise the leaves in a mortar and pour the Alcohol upon them; put them in the still without the water-bath, pour the water upon them, and distill a pint.

### EXTRACTUM POLYGONI DESTILLATUM.

#### *Distilled Extract Water-pepper or Smartweed.*

Smartweed, herb, fresh,	2 pounds avoird.
Water,	30 fluidounces.
Alcohol,	5 fluidounces.

Bruise the Smartweed in a mortar and pour the Alcohol upon it; put it in the still without the water-bath, pour the water upon it and distill a pint.

### EXTRACTUM PRUNI VIRGINIANÆ DESTILLATUM.

#### *Distilled Extract Wild Cherry.*

Wild Cherry, bark of root, fresh,	2 pounds avoird.
Water,	30 fluidounces.
Alcohol,	4 fluidounces.

Bruise the bark and pour the Alcohol upon it; put in the still without the water-bath, pour the water upon it and distill a pint.

Or,

Wild Cherry bark, dry,	1 pound avoird.
Water,	40 fluidounces.
Alcohol,	4 fluidounces.

Crush the bark and pour the water upon it, set in a warm place in a covered vessel for 24 hours, then add the Alcohol, put in the still without the water-bath, and distill a pint.

## EXTRACTUM SINAPIS DESTILLATUM.

### *Distilled Extract Mustard.*

Mustard Leaves, fresh,	2 pounds avoird.
Water,	30 fluidounces.
Alcohol,	4 fluidounces.

Bruise the leaves in a mortar and pour the Alcohol upon them; put in the still without the water-bath, add the water and distill a pint.

## EXTRACTA FLUIDA.

### *Fluid Extracts.*

The 1870 Pharmacopœia contained forty-six formulas for Fluid Extracts, all but two of which are retained in the present revision — Fluid Extract Erigeron and Fluid Extract Spigelia and Senna being dismissed. The 1880 Pharmacopœia has increased the list of official Fluid Extracts to seventy-nine.

The 1870 Pharmacopœia directed 16 troyounces of the drug to be made into a pint of the Fluid Extract; this made a preparation representing about five per cent. more of the drug than of the Fluid Extract,—being the difference between the 16 troyounces and 16 fluidounces.

The new Pharmacopœia, by using metric weight and measure, which are equivalent, makes the Fluid Extract exactly correspond in measure to the weight of the drug, so that the present standard requires of the drug 16 $\frac{2}{3}$  ounces avoirdupois to make 16 fluidounces of the Fluid Extract.

The large amount of glycerin which was directed in many of the 1870 Formulæ has been mostly omitted in the new authority, much to the advantage of many of the preparations. The directions for making are much more explicit and considerably improved in the new revision.

Fluid extracts aim to represent the entire soluble medicinal constituents of a certain weight of drug in an equivalent

fluid measure. As such, they are the most convenient of the galenicals, for they may be used in place of the drugs themselves in making many preparations extemporaneously that would otherwise require considerable time to prepare. They are also very convenient to prescribe, as the dose is the same as of the powdered drug or substances from which they are prepared.

Since the introduction of Fluid Extracts, some thirty-five years ago, many methods for making them have been proposed, all having in view the same object, viz.: To represent the entire medicinal value of a specified weight of the drug in an equivalent quantity of Fluid Extract. While, in main, this may readily be done, yet it must be borne in mind that the *entire* medicinal value of *some* drugs cannot be held in solution in an equivalent fluidmeasure of Fluid Extract, by the menstrua usually employed for making them.

A brief description of the principal methods which have heretofore been employed for making Fluid Extracts, is here given for the convenience of our readers, but the process of water-bath percolation presents great advantages over any other, and is therefore employed in the formulæ for the preparations. It is, in fact, the only process by which first-class fluid extracts can be made economically, in a small way by druggists.

The value of a fluid extract depends upon the amount of active medicinal agent that it contains, and the formulæ given are designed to best secure that end, without producing preparations loaded with inert and worthless extractive matter as is often the case with those furnished by manufacturers.

The formulas are each calculated to make a pint of fluid extract, but larger quantities may be made somewhat more advantageously.

In making large quantities it may not be necessary to continue the heat so long as is directed, as the water-bath will retain its heat for some time, when once heated.

When Fluid Extracts are used for making Tinctures, Infusions, Syrups, etc., fluidmeasure equivalent to the weight of the drug, or drugs directed, may be used. Solid extracts may

be made from nearly all the fluid extracts by evaporating them to the proper pilular consistence.

The following are the principal popular methods that have been employed or directed for making fluid extracts:

#### 1870 PROCESS.

“The quantity of powdered material directed to be used is sixteen troyounces. This powder is to be moistened with a specified quantity of menstruum, and properly packed in a suitable percolator. The surface of the powder is then to be covered with a disc of paper, and the remaining portion of sixteen fluidounces of menstruum is to be poured upon it. When the liquid begins to drop from the percolator, close the lower orifice with a cork, and, having closely covered the percolator to prevent evaporation, set it aside in a moderately warm place for four days.

“The cork is then to be removed, more menstruum is to be gradually poured on, and the percolation continued until twenty-four fluidounces have been obtained. Of these, the first fourteen fluidounces are to be reserved, and the remainder, having been carefully evaporated to two fluidounces, is to be mixed with the reserved portion, and filtered through paper if necessary.”

The quantity of drug directed in the 1870 formulæ is about 5 per cent. more than the equivalent fluid measure of the fluid extract obtained, the difference being the same as between troyweight and fluidmeasure.

#### 1880 PROCESS.

No general formula is given in the 1880 Pharmacopœia for making fluid extracts, each drug having a detailed formula for itself; but from them the following general formula may be deduced:

One hundred grammes of the powdered material directed to be used are moistened with from 30 to 50 grammes of menstruum (according to the nature of the drug), and properly packed in a suitable percolator; enough menstruum is then added to saturate the powder, and leave a stratum above it. When the liquid begins to drop from the percolator, the lower orifice is closed, the percolator covered, and its contents allowed to macerate for forty-eight hours. The stopper is then loosened, and the percolation allowed to proceed gradually, adding first the remainder of 100 grammes of the menstruum, which has not previously been used, and then

more menstruum, as is directed in the formula until the drug is exhausted. The first eighty-five cubic centimetres of the percolate received, are reserved, and, by means of a water-bath and still, the alcohol is recovered from the remainder, and the residue evaporated to a soft extract; this soft extract is then dissolved in the reserved portion, and enough menstruum (as is directed in the formula), added to make the Fluid Extract measure 100 cubic centimetres.

Fluid Extracts made by this process represent the medicinal value of a gramme of the drug in a cubic centimetre, therefore the weight of the drug and fluid measure of the fluid extract are equivalent.

### REPERCOLATION PROCESS.

The following is an abstract of Squibb's method of Fractional or Repercolation. This process is probably the best cold process in use, but it is too tedious to be generally employed by druggists: some skill and experience are required to use it successfully.

To make three pints of a Fluid Extract take of

The required drug, or drugs, in powder as directed.	50 ounces av.
The required menstruum as directed	a sufficient quantity.

*First.*—Take one-third of the powder ( $16\frac{2}{3}$  ounces avoird.) and three pints of the menstruum required. Moisten the powder with from six to eight fluidounces of the menstruum, pack it properly in a suitable percolator, pour upon it sufficient menstruum to saturate the drug and leave a stratum above it, and when the percolate begins to drop, close the lower orifice and allow to macerate from two to three days; then begin to percolate, adding the remainder of the menstruum (and more if necessary) to the powder, and continuing the percolation until the drug is exhausted, receiving the percolate as it passes in the following manner:

Reserve the first 12 fluidounces,—	mark <i>a</i> .
the next 6 “	“ <i>b</i> .
the next 8 “	“ <i>c</i> .
the remainder of the percolate,	“ <i>d</i> .

The last portion, *d*, is a variable quantity, but should be from 20 to 30 fluidounces. With some drugs this may be forced through by adding water through the percolator, while with others the same menstruum must be used throughout.

*Second.*—Take one-third more of the powder ( $16\frac{2}{3}$  ounces avoird.), as before, moisten it with the portion of percolate marked *b*, pack as before, pour upon it the portion of percolate marked *c*, and afterward sufficient of the percolate marked *d* to saturate the powder and leave a stratum above; allow to macerate, and percolate as before, adding the remainder of the percolate marked *d* and sufficient fresh menstruum to exhaust the drug, receiving the percolate as follows:

Reserve the first 16 fluidounces,—	mark <i>e</i> .
the next 6 “	“ <i>f</i> .
the next 8 “	“ <i>g</i> .
the remainder of the percolate,	“ <i>h</i> .

The last portion *h* is a variable quantity, but should be from 16 to 20 fluidounces. With some drugs it may be forced out with water, while with others the same menstruum should be used throughout.

*Third.*—Take the remaining one-third ( $16\frac{2}{3}$  ounces avoird.) of the powder; moisten it with the portion marked *f*, pack as before, pour upon it the portion marked *g*, and afterward sufficient of the percolate marked *h* to saturate the powder and leave a stratum above; allow to macerate and percolate as before, adding the remainder of the percolate marked *h* and sufficient fresh menstruum to exhaust the drug, receiving the percolate as follows:

Reserve the first 20 fluidounces,—	mark <i>i</i> .
the remainder of the percolate,	mark <i>j</i> .

*Lastly.*—Mix the reserved portions, *a e* and *i*, which constitute the Fluid Extract and reserve the last portion *j* to moisten and percolate the next batch of drugs to be made into Fluid Extract of the same kind, marking it re-percolate of the drug or drugs from which the Fluid Extract was prepared.

## PRESSURE PROCESS.

The following is an abstract of N. Spencer Thomas' method of extracting the strength of drugs by pressure.

Although this process does not entirely exhaust the medicinal strength of the drugs, it produces better extracts than most that are in the market.

*First.*—Take  $16\frac{2}{3}$  ounces avoird. of the drug, of the proper fineness, and menstruum sufficient. Moisten the drug with from eight to twelve fluidounces of the menstruum (according to the nature of the drug), and set aside in a wide mouth jar,

or suitable covered vessel. Allow to stand four days, then press out as much as possible with a tincture press, and reserve the product.

*Second.*—Moisten the same drug, as before, with from six to eight ounces of the menstruum. Allow to stand, and press out, as before, adding the product to the portion before reserved.

*Third.*—Repeat the second operation, adding the product to the portions before reserved.

*Fourth.*—Repeat the second operation, but so regulate the last amount of menstruum added as to make one pint of the Fluid Extract when added to the portions before reserved. Filter, if necessary.

When this process is employed the drugs should be inclosed in a coarse canvas cloth or bag before putting in the press. The pressure should be gradual and long continued, that the moisture may be as nearly as possible extracted from the drugs. A one gallon tincture press will answer very well for making from one to three pounds of Fluid Extract.

## COMBINATION PROCESS.

### *(Repercolation and Pressure.)*

To make three pints of a Fluid Extract, take of

- The required drug or drugs in powder, as directed, 50 ounces avoird.
- The required menstruum, as directed a sufficient quantity.

Divide the powder into three equal parts.

*First.*—Take one part or one-third of the powder ( $16\frac{2}{3}$  ounces avoird.) and three pints of the menstruum required. Moisten the powder with from 6 to 8 fluidounces of the menstruum, pack it properly in a suitable percolator, pour upon it sufficient menstruum to saturate the drug and leave a stratum above it, and when the percolate begins to drop, close the lower orifice, and allow to macerate from two to three days; then begin to percolate, adding the remainder of the menstruum, and continuing the percolation until it will no longer drop, receiving the percolate as follows:

Reserve the first 12 fluidounces,—	mark <i>a</i> .
the next 6 “	“ <i>b</i> .
the balance of the percolate,	“ <i>c</i> .
the portion obtained by pressure,	“ <i>d</i> .

The portion marked *c* will be a variable quantity according



to the nature of the drug; the portion marked *d* is to be obtained by pressing the drug, after it has been percolated, in a tincture press, and will be a variable quantity.

*Second.*—Take another part, or one-third of the powder ( $16\frac{2}{3}$  ounces avoird.), moisten it with the portion of the percolate marked *b*, pack as before, pour upon it the portion of the percolate marked *c*, and afterwards, if necessary, enough of the portion marked *d* to saturate the drug and leave a stratum above; allow to macerate, and percolate as before, adding the remainder of the portion marked *d*, and sufficient fresh menstruum, receiving the percolate as follows:

Reserve the first 16 fluidounces,—	mark <i>e</i> .
the next 6 “	“ <i>f</i> .
the balance of the percolate,	“ <i>g</i> .
the portion obtained by pressure,	“ <i>h</i> .

The percolation should be continued until the portion marked *g* measures about eight fluidounces. The portion will be variable depending upon the nature of a drug.

*Third.*—Take the remaining portion ( $16\frac{2}{3}$  ounces avoird.) of the powder; moisten it with the portion of the percolate marked *f*, pack as before, pour upon it the portion marked *g*, and enough of *h* to saturate the powder and leave a stratum above it; allow to macerate as before; then begin the percolation, pouring upon the powder all that remains of the portion *h*, and allowing it to percolate as long as it will drop. When the liquid has ceased to drop, transfer the drug to the tincture press, and press out as much as possible. Add this to the percolate obtained from this portion of the drug and measure the product, subtract this sum from 20 (the number of ounces required), and on the same drug that has been pressed put enough fresh menstruum to make up the amount required when subjected to a second pressure. (The amount of fresh menstruum added should be about two ounces more than the deficiency, as shown by the subtraction.) Macerate the drug with the menstruum for 24 hours and press out as before, adding the product to the portions before obtained to make up the 20 fluidounces.

*Lastly.*—Mix the reserved portions *a*, *e*, and the product of the *third* operation (20 ounces) to make three pints of the Fluid Extract, and filter.

## FLUID EXTRACTS BY WATER-BATH PERCOLATION.

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To give a detailed formula for every fluid extract which is made or known on the market would require of itself a large volume. In the formulæ for fluid extracts which follow, therefore, the officinal, the compound and these requiring special treatment, only, are given in detail, and the remainder are classed according to the menstruum used, the method of making, etc. The Latin botanical name and the popular common name of the drug are both given and have only to be substituted in the class formula to make a complete detailed formula for the required fluid extract. We have endeavored to give in these formulæ such simple, definite, and expedient directions as will enable druggists to make first-class fluid extracts, in a small way, in the most convenient and economical manner. Although the formulæ are adapted to the process of water-bath percolation (because it is best), other processes may be used, simply by substituting them in the formulæ.

The method of classification which has been adopted for Fluid Extracts does not admit of the general alphabetical arrangement which is carried through the other parts of this work; but each class is arranged alphabetically by itself, and reference to the general index will direct the reader to any fluid extract both by the Latin, botanical, and popular common name of the drug. To distinguish the officinal from the unofficinal fluid extracts, in the index, the officinal, only, bear the full Latin title with the genitive termination of the Latin name of the drug, (*e. g.* Extractum Aconiti Fluidum,) while the unofficinal have the English title, Fluid Extract coupled with the Latin botanical name (*e. g.* Fluid Extract Asarum Canadense).

### OFFICINAL FLUID EXTRACTS.

Under this heading are given detailed formulæ for all fluid extracts which are at present officinal. Although the formulæ are adapted to water-bath percolation, the characteristics of the officinal formulæ are adhered to as nearly as

is possible, and no changes are made except those which are plainly beneficial.

### EXTRACTUM ACONITI FLUIDUM.

#### *Fluid Extract of Aconite Root.*

Aconite Root, in No. 60 powder,  $16\frac{2}{3}$  ounces av.  
Tartaric Acid, 30 grains.  
Alcohol, a sufficient quantity.

Moisten the powder with 6 ounces of Alcohol and pack firmly in the water-bath percolator; pour upon it 10 ounces of Alcohol and set in a warm place for four days; then heat moderately, and after two hours begin to percolate slowly, adding Alcohol to the drug, and continuing the heat and percolation until 14 fluidounces have passed, which reserve. Turn off the heat and continue the percolation with Alcohol until 12 fluidounces more have passed or until the drug is exhausted. Distill the Alcohol from this last portion by means of a water-bath and still until it is reduced to two fluidounces, which add to the reserved portion. Lastly, dissolve the Tartaric Acid in the Fluid Extract, and after standing a few days filter through paper, adding enough Alcohol through the filter to make a pint.

The Alcohol remaining in the drug after percolation may be recovered by distillation.

This Fluid Extract is now officinal. When properly made it should not contain less than one per cent. of Aconitine. A good Fluid Extract of Aconite will deposit crystals of Aconitine on the sides of the bottle.

The English Aconite Root is preferred for making Fluid Extract or Tincture of Aconite, but the German is usually used by manufacturers on account of its lower price. Great care should be used in dispensing this extract, and it should never be confounded with the Fluid Extract of Aconite Leaves.

### EXTRACTUM ARNICÆ RADICIS FLUIDUM.

#### *Fluid Extract of Arnica Root.*

Arnica Root, in No. 50 powder,  $16\frac{2}{3}$  ounces av.  
Diluted Alcohol,  
Water, each a sufficient quantity.

Moisten the powder with 8 ounces of Diluted Alcohol

and macerate in a close vessel for 24 hours; transfer it to the water-bath percolator, pack firmly, pour upon it 12 ounces of Diluted Alcohol and set in a warm place for two days; then heat moderately, and after one hour begin to percolate slowly, adding Water to the drug after the liquid has all disappeared from the top, and continuing the heat and percolation until 14 fluidounces have passed, which reserve. Turn off the heat and continue the percolation with Water until 12 fluidounces more have passed, which evaporate by means of a water-bath to a soft extract; dissolve this in the reserved portion, add enough Diluted Alcohol to make the Fluid Extract measure a pint, and after standing a few days filter through muslin.

This is a new officinal.

### EXTRACTUM AROMATICUM FLUIDUM.

#### *Aromatic Fluid Extract.*

Aromatic Powder, 16 $\frac{2}{3}$  ounces av.  
Alcohol, a sufficient quantity.

Moisten the powder with 6 ounces of Alcohol, and pack very firmly in the water-bath percolator, pour upon it 10 ounces of Alcohol and set in a warm place for two days; then heat very moderately, and after one hour begin to percolate slowly, adding Alcohol to the drugs and continuing the heat and percolation until a pint of the Fluid Extract is obtained.

This is a new officinal designed chiefly as an aromatic for adding to other liquids, particularly carminative mixtures.

### EXTRACTUM AURANTII AMARI FLUIDUM.

#### *Fluid Extract of Bitter Orange Peel.*

Bitter Orange Peel, in No. 20 powder, 16 $\frac{2}{3}$  ozs. av.  
Alcohol,  
Water, each a sufficient quantity.

Mix 19 fluidounces of Alcohol with 8 fluidounces of Water, and, having moistened the powder with 8 ounces of the mixture, macerate it for twenty-four hours in a close vessel; transfer it to the water-bath percolator, pack very moderately, pour upon it 12 ounces of the menstruum, and set in a warm place for one day; then heat very moderately, and after one hour begin to percolate, adding menstruum

to the drug and continuing the heat and percolation until 14 fluidounces have passed, which reserve. Turn off the heat and continue the percolation with the menstruum until 12 fluidounces more have passed, which evaporate, first by distilling off 8 ounces of Alcohol, and then by open evaporation to a soft extract; dissolve this in the reserved portion, add enough menstruum to make the Fluid Extract measure a pint, and after standing a few days filter through muslin.

This is a new official.

## EXTRACTUM BELLADONNÆ FLUIDUM.

### *Fluid Extract of Belladonna Root.*

Belladonna Root, in No. 60  
powder, 16 $\frac{2}{3}$  ounces av.  
Alcohol, a sufficient quantity.

Moisten the powder with 6 ounces of Alcohol, pack it firmly in the water-bath percolator, pour upon it 10 ounces of Alcohol and set in a warm place for two days; then heat very moderately, and after one hour begin to percolate slowly, adding alcohol to the drug and continuing the heat and percolation until 14 fluidounces have passed, which reserve. Turn off the heat and continue the percolation with Alcohol until 12 fluidounces more have passed, or until the drug is exhausted. Distill the Alcohol from the last portion by means of a water-bath and still until only two fluidounces remain, which add to the portion previously reserved to make a pint of Fluid Extract.

The Alcohol remaining in the drug after percolation may be recovered by distillation.

The 1870 formula differs from the 1880, in the menstruum used which was, in the former, a mixture of Alcohol, Glycerin and Water.

## EXTRACTUM BRAYERÆ FLUIDUM.

### *Fluid Extract of Brayera (Kousso).*

Brayera (Kousso), in No. 40  
powder, 16 $\frac{2}{3}$  ounces av.  
Alcohol, a sufficient quantity.

Moisten the powder with 8 fluidounces of Alcohol, pack it very firmly in the water-bath percolator, pour upon it 10

ounces of Alcohol and set in a warm place for two days; then heat very moderately, and after one hour begin to percolate slowly, adding Alcohol to the drug and continuing the heat and percolation until 14 fluidounces have passed, which reserve. Turn off the heat and continue the percolation with Alcohol until 12 fluidounces more have passed, or until the drug is exhausted. Distill the Alcohol from this last portion until only two fluidounces remain, which add to the portion previously reserved to make a pint of the Fluid Extract.

The Alcohol remaining in the drug may be recovered by distillation.

The foregoing is in accordance with the 1880 Pharmacopœia formula—using Alcohol to exhaust the drug, as it is supposed the value of the drug as a tæniacuge is in the kōsin, which is insoluble in water; this may, however, be questioned, as the best results seem to be secured when the powdered drug is taken in water.

## EXTRACTUM BUCHU FLUIDUM.

### *Fluid Extract of Buchu.*

Buchu, in No. 40 powder,                      16 $\frac{2}{3}$  ounces av.  
Alcohol,  
Water, each a sufficient quantity.

Mix Alcohol and Water in the proportion of two parts of Alcohol by weight (19 $\frac{1}{2}$  fl.ounces), to one part of water (8 fl.ounces), and having moistened the powder with eight ounces of the mixture, macerate it in a close vessel for 24 hours, transfer it to the water-bath percolator, pack it firmly, pour upon it a pint of the menstruum, and set in a warm place for two days; then heat very moderately, and after one hour begin to percolate slowly, adding menstruum to the drug and continuing the heat and percolation until 14 fluidounces have passed, which reserve. Turn off the heat and continue the percolation with menstruum until 12 fluidounces more have passed or until the drug is exhausted. Distill off the Alcohol ( $\frac{3}{4}$  the measure) from this portion by means of the water-bath and still, and evaporate the remainder by the water-bath to a soft extract; dissolve this in the portion previously reserved and add enough menstruum to make a pint of the Fluid Extract.

The 1870 Pharmacopœia directed Alcohol as the menstruum for preparing this fluid extract, but the present offi-



cial formula directs two parts of Alcohol to one of water, which has proven a better menstruum for the purpose.

### EXTRACTUM CALAMI FLUIDUM.

*Fluid Extract of Calamus (Sweet Flag).*

Calamus (Sweet Flag), in No. 50  
powder,  $16\frac{2}{3}$  ounces av.  
Alcohol, a sufficient quantity.

Moisten the powder with six ounces of Alcohol, pack it firmly in the water-bath percolator, pour upon it ten ounces of Alcohol and set in a warm place for two days; then heat moderately, and after one hour begin to percolate, adding Alcohol to the drug and continuing the heat and percolation until 14 fluidounces have passed, which reserve. Turn off the heat and continue the percolation with Alcohol until 12 fluidounces more have passed, or until the drug is exhausted. Distill off the Alcohol from this last portion until only two ounces remain, which add to the portion before reserved, to make a pint of the Fluid Extract.

The Alcohol remaining in the drug after percolation may be recovered by distillation.

A menstruum of two parts of Alcohol to one part of water will do equally as well, but as the Pharmacopœia directs Alcohol, the formula is thus given. This is a new officinal.

### EXTRACTUM CALUMBÆ FLUIDUM.

*Fluid Extract of Calumba (Columbo).*

Calumba (Columbo), in No. 20  
powder,  $16\frac{2}{3}$  ounces av.  
Diluted Alcohol, a sufficient quantity.

Moisten the powder with 8 ounces of Diluted Alcohol and macerate in a close vessel for 24 hours; transfer to the water-bath percolator, pack moderately, pour upon it 12 ounces of Diluted Alcohol, and set in a warm place for one day; then heat moderately, and after one hour begin to percolate, adding Diluted Alcohol to the drug and continuing the heat and percolation until 14 fluidounces have passed, which reserve. Turn off the heat and continue the percolation with Diluted Alcohol until the drug is exhausted. Distill off the Alcohol (one-half of this last portion) by



means of the water-bath and still, and evaporate the remainder to a soft extract, which dissolve in the portion previously reserved, and add enough Diluted Alcohol to make a pint of the Fluid Extract.

The 1870 formula directed a menstruum composed of Alcohol Water and Glycerin, and containing a much larger proportion of Alcohol. The trouble usually experienced with percolating Calumba is that too fine a powder is taken, and the powder is not allowed to "swell" before packing in the percolator.

## EXTRACTUM CANNABIS INDICÆ FLUIDUM.

*Fluid Extract of Indian Cannabis (Indian Hemp).*

Indian Cannabis (Hemp), in No. 20  
 powder, 16 $\frac{2}{3}$  ounces av.  
 Alcohol, a sufficient quantity.

Moisten the powder with 6 ounces of Alcohol, pack firmly in the water-bath percolator, pour upon it 10 ounces of Alcohol and set in a warm place for two days; then heat very moderately, and after one hour begin to percolate slowly, adding Alcohol to the drug and continuing the heat and percolation until 14 fluidounces have passed, which reserve. Turn off the heat and continue the percolation with Alcohol until 12 ounces more have passed, or until the drug is exhausted. Distill the Alcohol from this last portion until only 2 ounces remain, which add to the 14 ounces previously reserved to make a pint of the Fluid Extract.

The Alcohol remaining in the drug after percolation may be recovered by distillation. This is a new official.

## EXTRACTUM CAPSICI FLUIDUM.

*Fluid Extract of Capsicum (Cayenne Pepper).*

Capsicum, in No. 60 powder, 16 $\frac{2}{3}$  ounces av.  
 Alcohol, a sufficient quantity.

Moisten the powder with 6 ounces of Alcohol, pack firmly in the water-bath percolator, pour upon it 10 ounces of Alcohol and set in a warm place for two days; then heat moderately, and after one hour begin to percolate slowly, adding Alcohol to the drug and continuing the heat and percolation until 14 fluidounces have passed, which reserve. Turn off the heat and continue the percolation with Alcohol until 16 ounces have passed, or until the drug is exhausted. Distill

the Alcohol from this last portion until only 2 ounces remain, which add to the 14 ounces previously reserved to make a pint of the Fluid Extract. Lastly, after standing a few days, filter through muslin. The Alcohol remaining in the drug after percolation may be recovered by distillation.

The *entire* strength of Capsicum cannot be exhausted, except by using a large amount of menstruum, but with the 16 ounces which are received after the first portion reserved, all the value of the drug is practically obtained.

### EXTRACTUM CASTANÆÆ FLUIDUM.

*Fluid Extract of Castanea (Chestnut Leaves).*

Castanea (Chestnut Leaves), in

No. 12 powder, 16 $\frac{2}{3}$  ounces av.

Alcohol,

Water, each, a sufficient quantity.

Moisten the powder with 10 ounces of Water and macerate for twenty-four hours; transfer to the water-bath percolator, pack moderately, pour upon it two pints of Water, heat at once until the water in the water-bath boils, and then begin to percolate, adding Water to the drug and continuing the heat and percolation until the drug is exhausted. Evaporate this percolate, on a water-bath to two pints, cool, add 5 fluidounces of Alcohol, and set in a cool place for 24 hours for the insoluble matter to precipitate; then filter through muslin, evaporate the filtered liquid to 12 $\frac{1}{2}$  fluidounces, and when cool add enough Alcohol to make a pint, and after standing a few days, filter through muslin.

This is a new officinal.

### EXTRACTUM CHIMAPHILÆ FLUIDUM.

*Fluid Extract of Chimaphila (Pipsissewa.)*

Chimaphila (Prince's Pine), in No.

20 powder, 16 $\frac{2}{3}$  ounces av.

Glycerin, 1 $\frac{1}{4}$  fl.ounces.

Diluted Alcohol, a sufficient quantity.

Mix the Glycerin with enough Diluted Alcohol to make a pint, and having moistened the powder with 8 ounces of the mixture, allow it to macerate for twenty-four hours in a close vessel, transfer it to the water-bath percolator, pack firmly, pour upon it the remainder of the mixture and set in a warm place for one day; then heat moderately, and after one hour

begin to percolate slowly, adding Diluted Alcohol to the drug and continuing the heat and percolation until 14 fluid-ounces have passed, which reserve. Turn off the heat and continue the percolation with Diluted Alcohol until the drug is exhausted. Distill the Alcohol ( $\frac{1}{2}$  the measure) from this last portion, and evaporate the remainder by the water-bath to a soft extract, which dissolve in the reserved portion and add enough Diluted Alcohol to make a pint of the Fluid Extract.

In the 1870 Formula a much larger quantity of Glycerin was directed than is at present used.

### EXTRACTUM CHIRATÆ FLUIDUM.

#### *Fluid Extract of Chirata.*

Chirata, in No. 30 powder,	16 $\frac{2}{3}$ ounces av.
Glycerin,	1 $\frac{1}{4}$ fl.ounces.
Diluted Alcohol, a sufficient quantity.	

Mix the Glycerin with enough Diluted Alcohol to make a pint, and having moistened the powder with 8 ounces of the mixture, allow it to macerate for 24 hours in a close vessel, transfer it to the water-bath percolator, pack firmly, pour upon it the remainder of the mixture and set in a warm place for one day; then heat moderately, and after one hour begin to percolate slowly, adding Diluted Alcohol to the drug and continuing the heat and percolation until 14 fluidounces have passed, which reserve. Turn off the heat and continue the percolation with Diluted Alcohol until the drug is exhausted. Distill the Alcohol ( $\frac{1}{2}$  the measure) from this last portion and evaporate the remainder by the water-bath to a soft extract, which dissolve in the reserved portion, and add enough Diluted Alcohol to make a pint of the Fluid Extract.

This is a new officinal.

### EXTRACTUM CIMICIFUGÆ FLUIDUM.

#### *Fluid Extract of Cimicifuga (Black Cohosh).*

Cimicifuga, in No. 50 powder,	16 $\frac{2}{3}$ ounces av.
Alcohol, a sufficient quantity.	

Moisten the powder with 6 ounces of Alcohol, pack firmly in the water-bath percolator, pour upon it 10 ounces of Alcohol and set in a warm place for two days; then heat moderately, and after one hour begin to percolate slowly, adding Alcohol to the drug and continuing the heat

and percolation until 14 fluidounces have passed, which reserve. Turn off the heat and continue the percolation with Alcohol until 12 ounces have passed, or until the drug is exhausted. Distill the Alcohol from this last portion until only 2 ounces remain, which add to the 14 ounces previously reserved to make a pint of the Fluid Extract. Lastly, after standing a few days, filter through muslin. The Alcohol remaining in the drug after percolation may be recovered by distillation. The 1870 and 1880 formulas are similar.

This fluid extract may also be made from the green root.

### EXTRACTUM CINCHONÆ FLUIDUM.

#### *Fluid Extract of Cinchona (Calisaya).*

Yellow Cinchona (Calisaya Bark),	
in No. 50 powder,	16 $\frac{2}{3}$ ounces av.
Glycerin,	5 fl.ounces.
Alcohol,	
Water, each, a sufficient quantity,	

Mix the Glycerin with 14 $\frac{1}{2}$  fluidounces of Alcohol, and having moistened the powder with 6 ounces of the mixture, pack it firmly in the water-bath percolator, pour upon it the remainder of the mixture and set in a warm place for two days; then heat moderately, and after one hour begin to percolate slowly, adding to the drug, after the liquid has ceased to drop, Alcohol and Water mixed in the proportion of three parts of Alcohol to one part of Water, and continuing the heat and percolation until 13 fluidounces have passed, which reserve. Turn off the heat and continue the percolation with the menstruum until the drug is exhausted. Distill the Alcohol ( $\frac{3}{4}$  of the measure) from this last portion, evaporate the remainder to a soft extract, which dissolve in the portion first reserved, and add enough of the menstruum of Alcohol and Water to make a pint of the Fluid Extract. Lastly, after standing a few days filter through muslin. The Alcohol remaining in the drug after percolation may be recovered by distillation. Fluid Extracts may be made from any variety of Cinchona bark by this formula.

The present formula directs the use of a much stronger Alcoholic menstruum and a little more Glycerin than the 1870.

Bear in mind that a good fluid extract cannot be made from a poor bark. See Cinchona.

## EXTRACTUM COLCHICI RADICIS FLUIDUM.

*Fluid Extract of Colchicum Root.*

Colchicum Root, in No. 50 powder,  $16\frac{2}{3}$  oz. av.

Alcohol,

Water, each, a sufficient quantity.

Mix Alcohol and water in the proportion of 19 fluid-ounces of Alcohol to 8 fluidounces of Water, and, having moistened the powder with 8 ounces of the mixture, macerate it for twenty-four hours in a close vessel; transfer it to the water-bath percolator, pack it firmly, pour upon it 10 ounces of the menstruum and set in a warm place for one day; then heat very moderately, and after one hour begin to percolate slowly, adding menstruum to the drug and continuing the heat and percolation until 14 ounces have passed, which reserve. Turn off the heat and continue the percolation with the menstruum until 12 ounces more have passed, or until the drug is exhausted. Distill the Alcohol ( $\frac{2}{3}$  of the measure), from this last portion, and evaporate the remainder to a soft extract by means of a water-bath; dissolve this in the portion previously reserved, and add enough menstruum to make a pint of the Fluid Extract. The Alcohol remaining in the drug after percolation may be recovered by distillation. The 1870 formula directed 4 ounces of Glycerin, which was unnecessary, and has been omitted; a stronger alcoholic menstruum is also used in the present formula.

## EXTRACTUM COLCHICI SEMINIS FLUIDUM.

*Fluid Extract of Colchicum Seed.*

Colchicum Seed, in No. 30 powder,  $16\frac{2}{3}$  ounces av.

Alcohol,

Water, each, a sufficient quantity.

Mix Alcohol and Water in the proportion of 19 fluid-ounces of Alcohol to 8 fluidounces of Water, and having moistened the powder with 8 ounces of the mixture, macerate it for twenty-four hours in a close vessel, transfer it to the water-bath percolator, pack it firmly, pour upon it 10 ounces of the menstruum, and set in a warm place for two days; then heat very moderately, and after one hour begin to percolate slowly, adding menstruum to the drug and continuing the heat and percolation until 14 ounces have passed, which reserve. Turn off the heat and continue the percolation with the menstruum until 12 ounces more have

passed, or until the drug is exhausted. Distill the Alcohol ( $\frac{2}{3}$  of the measure) from this last portion, and evaporate the remainder to a soft extract by means of a water-bath; dissolve this in the portion previously reserved, and add enough menstruum to make a pint of the Fluid Extract.

The Alcohol remaining in the drug after percolation may be recovered by distillation.

The 1870 formula directed 4 ounces of Glycerin, which was unnecessary, and has been omitted; a stronger alcoholic menstruum is also used in the present formula.

### EXTRACTUM CONII FLUIDUM.

*Fluid Extract of Conium (Cicuta, Water Hemlock).*

Conium (Fruit), in No. 40 powder,  $16\frac{2}{3}$  ounces av.  
 Diluted Hydrochloric Acid,  $\frac{1}{2}$  fl.ounce.  
 Diluted Alcohol, a sufficient quantity.

Moisten the powder with 8 ounces of Diluted Alcohol and macerate it for twenty-four hours in a close vessel; transfer it to the water-bath percolator, pack firmly, pour upon it 12 ounces of Diluted Alcohol and set in a warm place for one day, then heat moderately, and after one hour begin to percolate slowly, adding Diluted Alcohol to the drug, and continuing the heat and percolation until 14 fluidounces have passed, which reserve. Turn off the heat and continue the percolation with Diluted Alcohol until the drug is exhausted. Distill off the Alcohol ( $\frac{1}{2}$  of this last portion) by means of the water-bath and still, add the Diluted Hydrochloric Acid to the remainder and evaporate by the water-bath to a soft extract, which dissolve in the portion previously reserved and add enough Diluted Alcohol to make a pint of the Fluid Extract. Lastly, after standing a few days, filter through muslin.

The 1870 formula directed 4 fluidounces of Glycerin, which was needless, and is omitted in the present revision.

### EXTRACTUM CORNUS FLUIDUM.

*Fluid Extract of Cornus (Dogwood).*

Cornus (Dogwood bark), in No. 50  
 powder,  $16\frac{2}{3}$  ounces av.  
 Glycerin,  $2\frac{1}{2}$  fl.ounces.  
 Diluted Alcohol, a sufficient quantity.

Mix the Glycerin with enough Diluted Alcohol to make



a pint, and having moistened the powder with 8 ounces of the mixture, allow it to macerate for twenty-four hours in a close vessel; transfer it to the water-bath percolator, pack firmly, pour upon it the remainder of the mixture and set in a warm place for one day; then heat moderately, and after one hour begin to percolate slowly, adding Diluted Alcohol to the drug, and continuing the heat and percolation until 14 fluidounces have passed, which reserve. Turn off the heat and continue the percolation with Diluted Alcohol until the drug is exhausted. Distill the Alcohol ( $\frac{1}{2}$  the measure) from this last portion, and evaporate the remainder by the water-bath to a soft extract, which dissolve in the reserved portion, and add enough Diluted Alcohol to make a pint of the Fluid Extract.

In the present formula the quantity of Glycerin directed is but little more than half that used in the 1870.

### EXTRACTUM CUBEBÆ FLUIDUM.

#### *Fluid Extract of Cubeb.*

Cubeb, in No. 60 powder,                    16 $\frac{2}{3}$  ounces av.  
Alcohol, a sufficient quantity.

Moisten the powder with 6 ounces of Alcohol, pack firmly in the water-bath percolator, pour upon it 10 ounces of Alcohol, and set in a warm place for two days; then heat very moderately, and after one hour begin to percolate slowly, adding Alcohol to the drug and continuing the heat and percolation until 14 fluidounces have passed, which reserve. Turn off the heat and continue the percolation with Alcohol until 14 ounces more have passed, or until the drug is exhausted. Distill the Alcohol from this last portion until only 2 ounces remain, which add to the 14 ounces previously reserved to make a pint of the Fluid Extract. Lastly, after standing a few days filter through muslin. The Alcohol remaining in the drug after percolation may be recovered by distillation.

The 1870 and 1880 preparations are identical.

### EXTRACTUM CYPRIPEIDII FLUIDUM.

#### *Fluid Extract of Cypripedium (American Valerian, Nervine).*

Cypripedium, in No. 60 powder, 16 $\frac{2}{3}$  ounces av.  
Alcohol, a sufficient quantity.

Moisten the powder with 6 ounces of Alcohol, pack firmly



in the water-bath percolator, pour upon it 10 ounces of Alcohol and set in a warm place for two days; then heat very moderately, and after one hour begin to percolate slowly, adding Alcohol to the drug and continuing the heat and percolation until 14 fluidounces have passed, which reserve. Turn off the heat and continue the percolation with Alcohol until 12 ounces have passed, or until the drug is exhausted. Distill the Alcohol from this last portion until only 2 ounces remain, which add to the 14 ounces previously reserved to make a pint of the Fluid Extract. Lastly, after standing a few days, filter through paper. The Alcohol remaining in the drug after percolation may be recovered by distillation. This is a new officinal. It may also be made from the green root.

### EXTRACTUM DIGITALIS FLUIDUM.

*Fluid Extract of Digitalis (Foxglove).*

Digitalis, recently dried and in

No. 50 powder,

16 $\frac{2}{3}$  ounces av.

Alcohol,

Water, each, a sufficient quantity.

Mix Alcohol and Water in the proportion of 18 fluidounces of Alcohol to 5 fluidounces of Water. Moisten the powder with 10 ounces of the menstruum, pack very firmly in the water-bath percolator, pour upon it 12 ounces of the menstruum and set in a warm place for one day; then heat very moderately, and after one hour begin to percolate slowly, adding menstruum to the drug, and continuing the heat and percolation until 14 fluidounces have passed, which reserve. Turn off the heat and continue the percolation with menstruum until 12 ounces more have passed, or until the drug is exhausted. Distill the Alcohol (three-fourths of the measure) from this portion, evaporate the remainder to a soft extract, dissolve it in the portion first reserved, and add enough menstruum to make a pint of the Fluid Extract. The Alcohol remaining in the drug after percolation may be recovered by distillation.

The present officinal preparation differs from the former in omitting the use of Glycerin, which was entirely unnecessary.

## EXTRACTUM DULCAMARÆ FLUIDUM.

*Fluid Extract of Dulcamara (Bittersweet).*

Dulcamara (Bittersweet), in No.

50 powder, 16 $\frac{2}{3}$  ounces av.

Diluted Alcohol, a sufficient quantity.

Moisten the powder with 8 ounces of Diluted Alcohol, and macerate it for twenty-four hours in a close vessel, transfer it to the water-bath percolator, pack firmly, pour upon it 10 ounces of Diluted Alcohol and set in a warm place for two days; then heat moderately, and after one hour begin to percolate slowly, adding Diluted Alcohol to the drug and continuing the heat and percolation until 14 fluidounces have passed, which reserve. Turn off the heat and continue the percolation with Diluted Alcohol until the drug is exhausted. Distill off the Alcohol ( $\frac{1}{2}$  of this last portion) by means of the water-bath and still, and evaporate the remainder by the water-bath to a soft extract, which dissolve in the portion previously reserved and add enough Diluted Alcohol to make a pint of the Fluid Extract.

The 1870 formula directed 4 ounces of Glycerin, which was unnecessary, and has been omitted.

## EXTRACTUM ERGOTÆ FLUIDUM.

*Fluid Extract of Ergot (Spurred or Smut Rye).*

Ergot, recently ground and in

No. 50 powder, 16 $\frac{2}{3}$  ounces av.

Diluted Hydrochloric Acid, 1 fl.ounce.

Alcohol,

Water, each, a sufficient quantity.

Mix 6 fluidounces of Alcohol with 10 fluidounces of Water, moisten the powder with 6 ounces of the mixture, pack moderately in the water-bath percolator, pour upon it the remainder of the mixture and set in a warm place for two days; then heat very moderately, and after one hour, begin to percolate slowly, adding water to the drug after the liquid has ceased to drop, and continue the heat and percolation until 13 fluidounces have passed, which reserve. Turn off the heat and continue the percolation with water until the drug is exhausted. To this add the Diluted Hydrochloric Acid, and evaporate by the water-bath to a soft extract, which dissolve in the portion first reserved, and add enough

Diluted Alcohol to make a pint of the Fluid Extract. Lastly, after standing a few days, filter through powdered pumice stone to remove any oil that may remain in the Fluid Extract.

The foregoing formula differs somewhat from the officinal, but is thought to make a better preparation. The 1870 and 1880 formulas are entirely dissimilar, the 1870 using Glycerin, Acetic Acid and a stronger alcoholic menstruum. The formula here given makes a preparation which cannot be excelled, provided only good, fresh Ergot is used.

### EXTRACTUM ERYTHROXYLI FLUIDUM.

*Fluid Extract of Erythroxylon (Coca).*

Erythroxylon (Coca leaves), in  
No. 40 powder, 16 $\frac{2}{3}$  ounces.  
Diluted Alcohol, a sufficient quantity.

Moisten the powder with 10 ounces of Diluted Alcohol, and macerate it for twenty-four hours in a close vessel; transfer it to the water-bath percolator, pack firmly, pour upon it 10 ounces of Diluted Alcohol and set in a warm place for one day; then heat very moderately, and, after one hour, begin to percolate slowly, adding Diluted Alcohol to the drug, and continuing the heat and percolation until 13 fluid-ounces have passed, which reserve. Turn off the heat and continue the percolation with Diluted Alcohol until the drug is exhausted. Distill off the Alcohol ( $\frac{1}{2}$  of this last portion) by means of the water-bath and still, and evaporate the remainder by the water-bath to a soft extract, which dissolve in the portion previously reserved, and add enough Diluted Alcohol to make a pint of the Fluid Extract.

This is a new officinal.

### EXTRACTUM EUCALYPTI FLUIDUM.

*Fluid Extract of Eucalyptus.*

Eucalyptus (leaves), in No. 40  
powder, 16 $\frac{2}{3}$  ounces av.  
Alcohol, a sufficient quantity.

Moisten the powder with 8 ounces of Alcohol, pack firmly in the water-bath percolator, pour upon it 8 ounces of Alcohol, and set in a warm place for two days; then heat very moderately, and, after one hour, begin to percolate slowly, adding Alcohol to the drug, and continuing the heat and

percolation until 13 fluidounces have passed, which reserve. Turn off the heat and continue the percolation with Alcohol until 13 ounces more have passed, or until the drug is exhausted. Distill the Alcohol from this last portion until only 3 ounces remain, which add to the 13 ounces previously reserved, to make one pint of the Fluid Extract. Lastly, after standing a few days filter through paper. The Alcohol remaining in the drug after percolation, may be recovered by distillation. This is a new officinal.

### EXTRACTUM EUPATORII FLUIDUM.

*Fluid Extract of Eupatorium (Boneset, Thoroughwort.)*

Eupatorium (Boneset), in No. 30  
 powder, 16 $\frac{2}{3}$  oz. av.  
 Diluted Alcohol, a sufficient quantity.

Moisten the powder with 10 ounces of Diluted Alcohol, and macerate it for twenty-four hours in a close vessel; transfer it to the water-bath percolator, pack firmly, pour upon it 10 ounces of Diluted Alcohol, and set in a warm place for one day; then heat moderately, and, after one hour, begin to percolate slowly, adding Diluted Alcohol to the Drug, and continuing the heat and percolation until 14 fluidounces have passed, which reserve. Turn off the heat and continue the percolation with Diluted Alcohol until the drug is exhausted. Distill off the Alcohol ( $\frac{1}{2}$  of this last portion) by means of the water-bath and still, and evaporate the remainder by the water-bath to a soft extract, which dissolve in the portion previously reserved, and add enough Diluted Alcohol to make a pint of the Fluid Extract.

This is a new officinal.

### EXTRACTUM FRANGULÆ FLUIDUM.

*Fluid Extract of Frangula (Buckthorn Bark).*

Frangula (Buckthorn Bark), in No. 40  
 powder, 16 $\frac{2}{3}$  oz. av.  
 Alcohol,  
 Water, each, a sufficient quantity.

Mix 6 fluidounces of Alcohol with 8 fluidounces of Water, moisten the powder with 8 ounces of the mixture, and macerate in a close vessel for twenty-four hours; transfer to the water-bath percolator, pack firmly, pour upon it the remain-

der of the mixture, and set in a warm place for two days; then heat moderately, and, after one hour, begin to percolate slowly, adding Water to the drug, and continuing the heat and percolation until 13 fluidounces have passed, which reserve. Turn off the heat, and continue the percolation with water until the drug is exhausted; evaporate this last portion to a soft extract, which dissolve in the portion first reserved, and add enough Alcohol and water mixed in the proportion of 6 fluidounces of Alcohol to 8 fluidounces of Water, to make a pint of the Fluid Extract. Lastly, after standing a few days, filter through muslin.

This preparation has become quite popular within the last few years, and is now made officinal.

### EXTRACTUM GELSEMI FLUIDUM.

*Fluid Extract of Gelsemium (Yellow Jasmine).*

Gelsemium, in No. 60 powder,                    16 $\frac{2}{3}$  oz. av.  
Alcohol, a sufficient quantity.

Moisten the powder with 6 ounces of Alcohol, pack firmly in water-bath percolator, pour upon it 10 ounces of Alcohol, and set in warm place two days; then heat very moderately, and, after one hour, begin to percolate slowly, adding Alcohol to the drug, and continuing the heat and percolation until 14 fluidounces have passed, which reserve. Turn off the heat, and continue the percolation with Alcohol until 14 ounces have passed, or until the drug is exhausted. Distill the Alcohol from this last portion until only 2 ounces remain, which add to the 14 ounces previously reserved, to make a pint of the Fluid Extract. Lastly, after standing a few days, filter through paper. The Alcohol remaining in the drug after percolation, may be recovered by distillation.

The 1870 and 1880 formulas are similar.

This may also be made from the green root, and is claimed to be much superior to that made from the dried root.

### EXTRACTUM GENTIANÆ FLUIDUM.

*Fluid Extract of Gentian.*

Gentian, in No. 20 powder,                    16 $\frac{2}{3}$  oz. av.  
Diluted Alcohol, a sufficient quantity.

Moisten the powder with 8 ounces of Diluted Alcohol, and macerate it for twenty-four hours in a close vessel; trans-

fer it to the water-bath percolator, pack moderately, pour upon it 10 ounces of Diluted Alcohol, and set in a warm place for one day; then heat moderately, and, after one hour, begin to percolate slowly, adding Diluted Alcohol to the drug, and continuing the heat and percolation until 13 fluidounces have passed, which reserve. Turn off the heat, and continue the percolation with Diluted Alcohol until the drug is exhausted. Distill off the Alcohol ( $\frac{1}{2}$  of this last portion) by means of the water-bath and still, and evaporate the remainder by the water-bath to a soft extract, which dissolve in the portion previously reserved, and add enough Diluted Alcohol to make a pint of the Fluid Extract.

The 1870 formula directed 4 fluidounces of Glycerin, which was unnecessary, and has been omitted.

### EXTRACTUM GERANII FLUIDUM.

*Fluid Extract of Geranium (Cranesbill).*

Geranium (Cranesbill Root) in No. 30

powder,

16 $\frac{2}{3}$  oz. av.

Glycerin,

1 $\frac{1}{4}$  fl. oz.

Diluted Alcohol, a sufficient quantity.

Mix the Glycerin with enough Diluted Alcohol to make a pint, and having moistened the powder with 8 ounces of the mixture, allow it to macerate for twenty-four hours in a close vessel; transfer it to the water-bath percolator, pack moderately, pour upon it the remainder of the mixture, and set in a warm place for two days; then heat very moderately, and, after one hour, begin to percolate slowly, adding Diluted Alcohol to the drug, and continuing the heat and percolation until 13 fluidounces have passed, which reserve. Turn off the heat, and continue the percolation with Diluted Alcohol until the drug is exhausted. Distill the Alcohol ( $\frac{1}{2}$  the measure) from this last portion, and evaporate the remainder by the water-bath to a soft extract, which dissolve in the reserved portion, and add enough Diluted Alcohol to make a pint of the Fluid Extract.

In the 1870 formula a much larger quantity of Glycerin was directed than is at present used.



## EXTRACTUM GLYCYRRHIZÆ FLUIDUM.

*Fluid Extract of Glycyrrhiza (Liquorice).*

Glycyrrhiza (Liquorice Root), in No.

30 powder,

16 $\frac{2}{3}$  oz. av.

Water of Ammonia,

1 $\frac{1}{2}$  fl.oz.

Diluted Alcohol, a sufficient quantity.

Mix a fluidounce of Water of Ammonia with a pint of Diluted Alcohol, and, having moistened the powder with 8 ounces of the mixture, macerate it in a close vessel for twenty-four hours; transfer it then to the water-bath percolator, pack moderately, pour upon it the remainder of the mixture, and set in a warm place for one day; then heat moderately, and, after one hour, begin to percolate slowly, adding Diluted Alcohol to the drug after the liquid has ceased to drop, and continuing the heat and percolation until 13 fluidounces have passed, which reserve. Turn off the heat, and continue the percolation with Water until the drug is exhausted; add half an ounce of Water of Ammonia to this portion, and evaporate it to a soft extract, which dissolve in the portion first reserved, and add enough Diluted Alcohol to make a pint of the Fluid Extract. Lastly, after standing a few days, filter through muslin. The addition of Water of Ammonia, and the omission of Glycerin in the present officinal formula, are great improvements.

## EXTRACTUM GOSSYPII RADICIS FLUIDUM.

*Fluid Extract of Cotton Root.*

Gossypium (Cotton Root bark),

in No. 30 powder,

16 $\frac{2}{3}$  ounces av.

Glycerin,

4 $\frac{1}{2}$  fluidounces.

Alcohol, a sufficient quantity.

Mix the Glycerin with 12 fluidounces of Alcohol, and having moistened the powder with 8 ounces of the mixture, pack it firmly in the water-bath percolator, pour the remainder of the mixture upon it and set in a warm place for two days; then heat very moderately and after one hour begin to percolate slowly, adding Alcohol to the drug after the liquid has ceased to drop and continuing the heat and percolation until 12 fluidounces have passed, which reserve. Turn off the heat and continue the percolation with Alcohol until the



drug is exhausted. Distill the Alcohol from this last portion until only 4 ounces remain, which add to the 12 ounces previously reserved to make a pint of the Fluid Extract. Lastly, after standing a few days, filter through muslin.

The 1870 formula directed about the same amount of Glycerin as the 1880, but the percolation was made with Diluted Alcohol, instead of Alcohol as at present.

Whether this will prevent the preparation from gelatinizing, remains yet to be seen, but unless it is an improvement in this respect the weaker Alcoholic menstruum would seem preferable.

A superior fluid extract (which it is claimed will not gelatinize) is made from the green root bark.

### EXTRACTUM GRINDELIAE FLUIDUM.

#### *Fluid Extract of Grindelia.*

Grindelia, in No. 30 powder,      16 $\frac{2}{3}$  ounces av.  
Alcohol,  
Water, each, a sufficient quantity.

Mix Alcohol and Water in the proportion of 18 fluid-ounces of Alcohol to 5 fluidounces of Water. Moisten the powder with 10 ounces of the menstruum, pack very firmly in the water-bath percolator, pour upon it 12 ounces of the menstruum, and set in a warm place for one day; then heat moderately and after one hour begin to percolate slowly, adding menstruum to the drug and continuing the heat and percolation until 14 fluidounces have passed, which reserve. Turn off the heat and continue the percolation with menstruum until 12 ounces more have passed, or until the drug is exhausted. Distill the Alcohol ( $\frac{3}{4}$  of the measure) from this portion, evaporate the remainder to the consistence of a soft extract, dissolve it in the portion first reserved and add enough menstruum to make a pint of the Fluid Extract. The Alcohol remaining in the drug after percolation may be recovered by distillation. This is a new official; it is also made from the fresh plant.

### EXTRACTUM GUARANÆ FLUIDUM.

#### *Fluid Extract of Guarana.*

Guarana, in No. 50 powder,      16 $\frac{2}{3}$  ounces av.  
Alcohol,  
Water, each, a sufficient quantity.

Mix Alcohol and Water in the proportion of 18 fluid-

ounces of Alcohol to 5 fluidounces of Water. Moisten the powder with 8 ounces of the menstruum, pack firmly in the water-bath percolator, pour upon it 12 ounces of the menstruum and set in a warm place for two days; then heat moderately and after one hour begin to percolate slowly, adding menstruum to the drug and continuing the heat and percolation until 14 fluidounces have passed, which reserve. Turn off the heat and continue the percolation with menstruum until 12 ounces more have passed, or until the drug is exhausted. Distill the Alcohol (three-fourths of the measure) from this portion, evaporate the remainder to a soft extract, dissolve it in the portion first reserved and add enough menstruum to make a pint of the Fluid Extract. The Alcohol remaining in the drug after percolation may be recovered by distillation. This is a new officinal.

### EXTRACTUM HAMAMELIDIS FLUIDUM.

*Fluid Extract of Hamamelis (Witch Hazel).*

Hamamelis (Witch Hazel leaves),  
in No. 40. powder, 16 $\frac{2}{3}$  ounces av.  
Alcohol,  
Water, each, a sufficient quantity.

Mix 5 fluidounces of Alcohol with 12 ounces of Water, and having moistened the powder with 8 ounces of the mixture, macerate it in a close vessel for twenty-four hours; transfer it to the water-bath percolator, pack it moderately, pour upon it the remainder of the mixture and set in a warm place for one day; then heat moderately and after one hour begin to percolate slowly, adding Water to the drug after the liquid has ceased to drop, and continuing the heat and percolation until 13 fluidounces have passed, which reserve. Turn off the heat and continue the percolation with Water until the drug is exhausted. Evaporate this last portion to a soft extract, dissolve it in the portion previously reserved, and add enough Diluted Alcohol to make a pint of the Fluid Extract. Lastly, after standing a few days, filter through muslin.

This new officinal preparation is probably introduced because of the popularity of the Distilled Extract of Witch Hazel. A Fluid Extract is also made from the bark.

## EXTRACTUM HYDRASTIS FLUIDUM.

*Fluid Extract of Hydrastis (Golden Seal).*

Hydrastis (Golden Seal), in No. 50  
powder, 16 $\frac{2}{3}$  ounces av.  
Alcohol,  
Water, each, a sufficient quantity.

Mix Alcohol and Water in the proportion of 18 fluid-ounces of Alcohol to 5 fluidounces of Water. Moisten the powder with 8 ounces of the menstruum, pack firmly in the water-bath percolator, pour upon it 12 ounces of the menstruum and set in a warm place for two days; then heat moderately and after one hour begin to percolate slowly, adding menstruum to the drug and continuing the heat and percolation until 14 fluidounces have passed, which reserve. Turn off the heat and continue the percolation with menstruum until 12 ounces more have passed or until the drug is exhausted. Distill the Alcohol ( $\frac{3}{4}$  of the measure) from this portion, evaporate the remainder to a soft extract, dissolve it in the portion first reserved and add enough menstruum to make a pint of the Fluid Extract. The Alcohol remaining in the drug after percolation may be recovered by distillation.

The present preparation differs but slightly from the 1870, except in the omission of Glycerin, which was unnecessary.

## EXTRACTUM HYOSCYAMI FLUIDUM.

*Fluid Extract of Hyoscyamus (Henbane).*

Hyoscyamus, in No. 50 powder, 16 $\frac{2}{3}$  ounces av.  
Alcohol,  
Water, each, a sufficient quantity.

Mix Alcohol and Water in the proportion of 18 fluid-ounces of Alcohol to 5 fluidounces of Water. Moisten the powder with 10 ounces of the menstruum, pack very firmly in the water-bath percolator and set in a warm place for one day; then heat moderately and after one hour begin to percolate slowly, adding menstruum to the drug and continuing the heat and percolation until 14 fluidounces have passed, which reserve. Turn off the heat and continue the percolation with menstruum until 12 ounces more have passed or until the drug is exhausted. Distill the Alcohol (three-fourths of the measure) from this portion, evaporate the re-

mainder to a soft extract, dissolve it in the portion first reserved and add enough menstruum to make a pint of the Fluid Extract. The Alcohol remaining in the drug after percolation may be recovered by distillation.

The present officinal preparation differs from the 1870, by the omission of Glycerin, which was unnecessary.

## EXTRACTUM IPECACUANHÆ FLUIDUM.

### *Fluid Extract of Ipecac.*

Ipecac, in No. 60 powder,                      16 $\frac{2}{3}$  ounces av.  
Alcohol,  
Water, each, a sufficient quantity.

Moisten the powder with 6 ounces of Alcohol, and pack firmly in the water-bath percolator; pour upon it 10 ounces of Alcohol, and set in a warm place for two days; then heat very moderately, and after one hour begin to percolate slowly, adding Alcohol to the drug and continuing the percolation until the drug is exhausted. Distill the Alcohol from this by means of the water-bath and still until only 4 fluidounces remain, which mix with a pint of Water, and evaporate by the water-bath to 12 fluidounces; allow to stand in a cool place for forty-eight hours, then filter through paper, washing the precipitate on the filter with Water until the latter passes through tasteless; evaporate the filtrate and washings to half a pint, and, when cool, add enough Alcohol to make a pint of the Fluid Extract. Lastly, after standing a few days, filter through muslin.

This formula corresponds very nearly with the present officinal one, which is entirely different from the 1870, and is much superior to it, as it represents the medicinal value of the drug in a Fluid Extract that is miscible with syrup without forming a precipitate of resinous matter.

## EXTRACTUM IRIDIS FLUIDUM.

### *Fluid Extract of Iris (Blue Flag).*

Iris (Blue Flag Root), in No. 50  
powder,    16 $\frac{2}{3}$  ounces av.  
Alcohol,  
Water, each, a sufficient quantity.

Mix Alcohol and Water in the proportion of 18 fluidounces of Alcohol, to 5 fluidounces of water; moisten the powder with 8 ounces of the menstruum, pack moderately in the

water-bath percolator, pour upon it 12 ounces of the menstruum and set in a warm place for one day; then heat very moderately, and after one hour begin to percolate slowly, adding menstruum to the drug and continuing the heat and percolation until 14 fluidounces have passed, which reserve. Turn off the heat and continue the percolation with menstruum until 12 ounces more have passed, or until the drug is exhausted. Distill the Alcohol ( $\frac{3}{4}$  of the measure) from this portion, evaporate the remainder to a soft extract, dissolve it in the portion first reserved and add enough menstruum to make a pint of the Fluid Extract. The Alcohol remaining in the drug after percolation may be recovered by distillation.

This is a new officinal; it may also be made from the green root.

### EXTRACTUM KRAMERIÆ FLUIDUM.

*Fluid Extract of Krameria (Rhatany).*

Krameria (Rhatany), in No. 30	
powder,	16 $\frac{2}{3}$ ounces av.
Glycerin,	2 $\frac{1}{4}$ fl. ounces.
Diluted Alcohol, a sufficient quantity.	

Mix the Glycerin with enough Diluted Alcohol to make a pint, and having moistened the powder with 8 ounces of the mixture, allow it to macerate for twenty-four hours in a close vessel, transfer it to the water-bath percolator, pack firmly, pour upon it the remainder of the mixture and set in a warm place for two days; then heat very moderately, and after one hour begin to percolate slowly, adding Diluted Alcohol to the drug, and continuing the heat and percolation until 14 fluidounces have passed, which reserve. Turn off the heat and continue the percolation with Diluted Alcohol until the drug is exhausted. Distill the Alcohol (half the measure) from this last portion and evaporate the remainder by the water-bath to a soft extract, which dissolve in the reserved portion and add enough Diluted Alcohol to make a pint of the Fluid Extract.

A less quantity of Glycerin is used in the present than in the former formula.

## EXTRACTUM LACTUCARII FLUIDUM.

*Fluid Extract of Lactucarium.*

Lactucarium, in No. 70 powder, 16 $\frac{2}{3}$  ounces av.  
Rice Chaff, 1 pint.  
Naphtha or Gasoline,  
Alcohol,  
Water, each, a sufficient quantity.

Mix the powder thoroughly with the Chaff and pack them firmly in the water-bath percolator. Pour upon them 24 fluidounces of Naphtha, and set in a warm place for two days ; then pour hot water into the water-bath, surrounding the percolator, and keep at a moderate heat by the occasional addition of hot water to the water-bath for one hour ; then begin to percolate, adding Naphtha to the drugs and continuing the heat and percolation until 4 pints of percolate have passed, which throw away. Remove the drugs from the percolator, dry them in the open air, and, having mixed Alcohol and water in the proportion of half a pint of Alcohol to a pint and a quarter of water, moisten the drugs with 12 ounces of the mixture, pack them firmly in the water-bath percolator, pour upon them a pint of the menstruum, and set in a warm place for one day ; then heat very moderately, and after one hour begin to percolate slowly, continuing the heat and percolation until 12 fluidounces have passed, which reserve ; continue the heat and the percolation with water until the drug is exhausted, evaporate this last portion by the water-bath to a syrupy consistence ; mix it with the reserved portion and add enough menstruum to make a pint of the Fluid Extract. Lastly, after standing a few days, filter through muslin.

The object of making this Fluid Extract in this manner is to have a preparation which will form a clear mixture with syrup and still retain all the valuable soluble constituents of the drug.

The Pharmacopœia process, which was suggested by Prof. C. Lewis Diehl, is altogether different, requiring more labor to prepare, and being more expensive, without securing the desired results any better than the process here given.

## EXTRACTUM LEPTANDRÆ FLUIDUM.

*Fluid Extract of Leptandra (Culvers Root).*

Leptandra (Black Root), in No. 50  
powder,  $16\frac{2}{3}$  ounces av.  
Glycerin, 2 fl. ounces.  
Diluted Alcohol, a sufficient quantity.

Mix the Glycerin with enough Diluted Alcohol to make a pint, and having moistened the powder with 8 ounces of the mixture, allow it to macerate for twenty-four hours in a close vessel; transfer it to the water-bath percolator, pack firmly, pour upon it the remainder of the mixture, and set in a warm place for two days; then heat moderately, and after one hour begin to percolate slowly, adding Diluted Alcohol to the drug, and continuing the heat and percolation until 14 fluidounces have passed, which reserve. Turn off the heat and continue the percolation with Diluted Alcohol until the drug is exhausted. Distill the Alcohol ( $\frac{1}{2}$  the measure) from this last portion and evaporate the remainder by the water-bath to a soft extract, which dissolve in the reserved portion, and add enough Diluted Alcohol to make a pint of the Fluid Extract. This is a new officinal; a superior preparation is claimed to be made from the green root.

## EXTRACTUM LOBELIÆ FLUIDUM.

*Fluid Extract of Lobelia.*

Lobelia (herb), in No. 50 powder,  $16\frac{2}{3}$  ounces av.  
Diluted Alcohol, a sufficient quantity.

Moisten the powder with 10 ounces of Diluted Alcohol and macerate it for twenty-four hours in a close vessel, transfer it to the water-bath percolator, pack firmly, pour upon it 10 ounces of Diluted Alcohol, and set in a warm place for one day; then heat moderately, and after one hour begin to percolate slowly, adding Diluted Alcohol to the drug and continuing the heat and percolation until 14 fluidounces have passed, which reserve. Turn off the heat and continue the percolation with Diluted Alcohol until the drug is exhausted. Distill off the Alcohol (one half of this last portion) by means of the water-bath and still and evaporate the remainder by the water-bath to a soft extract, which dissolve in the portion previously reserved and add enough Diluted Alcohol to make a pint of the Fluid Extract. This is a new officinal. It may also be made from the green herb.



## EXTRACTUM LUPULINÆ FLUIDUM.

*Fluid Extract of Lupulin.*

Lupulin, 16 $\frac{2}{3}$  ounces.  
Alcohol, a sufficient quantity.

Moisten the powder with 6 ounces of Alcohol, pack firmly in the water-bath percolator, pour upon it 10 ounces of Alcohol and set in a warm place for two days; then heat moderately, and after one hour, begin to percolate slowly, adding Alcohol to the drug, and continuing the heat and percolation until 14 fluidounces have passed, which reserve. Turn off the heat and continue the percolation with Alcohol until 14 ounces more have passed, or until the drug is exhausted. Distill the Alcohol from this last portion until only 2 ounces remain, which add to the 14 ounces previously reserved, to make a pint of the Fluid Extract. Lastly, after standing a few days, filter through paper. The Alcohol remaining in the drug after percolation may be recovered by distillation.

The 1870 and 1880 preparations are identical.

## EXTRACTUM MATICO FLUIDUM.

*Fluid Extract of Matico.*

Matico, in No. 40 powder, 16 $\frac{2}{3}$  ounces av.  
Glycerin, 1 $\frac{1}{4}$  fl.ounces.  
Alcohol,  
Water, each, a sufficient quantity.

Mix the Glycerin with 14 fluidounces of Alcohol and 3 fluidounces of water, and, having moistened the powder with 8 ounces of the mixture, macerate for twenty-four hours in a close vessel; transfer to the water-bath percolator, pack firmly, pour upon it the remainder of the mixture and set in a warm place for one day; then heat moderately, and, after one hour, begin to percolate slowly, adding to the drug, when the liquid has ceased to drop, Alcohol and Water mixed in the proportion of 18 fluidounces of Alcohol to 5 $\frac{1}{2}$  fluidounces of Water, and continuing the heat and percolation until 14 fluidounces have passed, which reserve. Turn off the heat and continue the percolation with the menstruum until the drug is exhausted; distill the Alcohol from this portion and evaporate the residue to a soft extract, which dissolve in the reserved portion, and add enough menstruum

to make a pint of the Fluid Extract. The Alcohol remaining in the drug, after percolation, may be recovered by distillation. The 1870 formula does not differ materially from the 1880 except in the quantity of Glycerin used, which is nearly three times as much in the former.

### EXTRACTUM MEZEREI FLUIDUM.

#### *Fluid Extract of Mezerium.*

Mezerium, in No. 30 powder,      16 $\frac{2}{3}$  ounces av.  
Alcohol, a sufficient quantity.

Moisten the powder with 6 ounces of Alcohol, pack firmly in the water-bath percolator, pour upon it 10 ounces of Alcohol, and set in a warm place for two days; then heat moderately, and after one hour being to percolate slowly, adding Alcohol to the drug, and continuing the heat and percolation until 13 fluidounces have passed, which reserve. Turn off the heat and continue the percolation with Alcohol until 13 ounces more have passed, or until the drug is exhausted. Distill the Alcohol from this last portion until only 3 ounces remain, which add to the 13 ounces previously reserved, to make a pint of the Fluid Extract. Lastly, after standing a few days, filter through paper. The Alcohol remaining in the drug after percolation may be recovered by distillation.

The 1870 and 1880 preparations are identical.

### EXTRACTUM NUCIS VOMICÆ FLUIDUM.

#### *Fluid Extract of Nux Vomica.*

Nux Vomica, in No. 60  
powder,      16 $\frac{2}{3}$  ounces av.  
Alcohol,  
Water, each, a sufficient quantity.

Mix 18 fluidounces of Alcohol with 2 fluidounces of Water, and, having moistened the powder with the mixture, macerate it in a close vessel in a warm place for two days; transfer it to the water-bath percolator, pack firmly, pour sufficient menstruum, made as before, upon it, to cover it, and set in a warm place for two days; then heat moderately, and, after one hour, begin to percolate slowly, adding menstruum to the drug and continuing the heat and percolation until the drug is exhausted. Reserve the first 15 fluidounces that pass; distill nearly all the Alcohol from the remainder,

and evaporate the residue to a soft extract, which dissolve in the reserved portion and add enough menstruum to make a pint of the Fluid Extract. After standing a few days, filter through paper.

The Alcohol remaining in the drug after percolation may be recovered by distillation.

This is a new officinal.

## EXTRACTUM PAREIRÆ FLUIDUM.

### *Fluid Extract of Pareira.*

Pareira, in No. 40 powder,	16 $\frac{2}{3}$ ounces av.
Glycerin,	2 $\frac{1}{2}$ fl.ounces.
Diluted Alcohol, a sufficient quantity.	

Mix the Glycerin with enough Diluted Alcohol to make a pint, and having moistened the powder with 8 ounces of the mixture, allow it to macerate for twenty-four hours in a close vessel; transfer it to the water-bath percolator, pack firmly, pour upon it the remainder of the mixture and set in a warm place for two days; then heat moderately, and after one hour, begin to percolate slowly, adding Diluted Alcohol to the drug, and continuing the heat and percolation until 14 fluidounces have passed, which reserve. Turn off the heat and continue the percolation with Diluted Alcohol until the drug is exhausted. Distill the Alcohol ( $\frac{1}{2}$  the measure) from this portion, and evaporate the remainder by the water-bath to a soft extract, which dissolve in the reserved portion and add enough Diluted Alcohol to make a pint of the Fluid Extract.

The present officinal preparation differs from the 1870 in containing less Glycerin, and a weaker Alcoholic menstruum.

## EXTRACTUM PILOCARPI FLUIDUM.

### *Fluid Extract of Pilocarpus (Jaborandi)*

Pilocarpus (Jaborandi), in No.	
30 powder,	16 $\frac{2}{3}$ ounces av.
Diluted Alcohol, a sufficient quantity.	

Moisten the powder with 10 ounces of Diluted Alcohol, and macerate it for twenty-four hours in a close vessel; transfer it to the water-bath percolator, pack very firmly, pour upon it 10 ounces of Diluted Alcohol, and set in a warm place for one day; then heat moderately, and, after one

hour, begin to percolate slowly, adding Diluted Alcohol to the drug, and continuing the heat and percolation until 14 fluidounces have passed, which reserve. Turn off the heat and continue the percolation with Diluted Alcohol until the drug is exhausted. Distill off the Alcohol ( $\frac{1}{2}$  of this last portion) by means of the water-bath and still and evaporate the remainder by the water-bath to a soft extract, which dissolve in the portion previously reserved, and add enough Diluted Alcohol to make a pint of the Fluid Extract. This is a new officinal.

### EXTRACTUM PODOPHYLLI FLUIDUM.

*Fluid Extract of Podophyllum (Mandrake, May Apple).*

Podophyllum (Mandrake Root), in

No. 50 powder, 16 $\frac{2}{3}$  oz. av.

Alcohol,

Water, each, a sufficient quantity.

Mix Alcohol and Water in the proportion of 18 fluidounces of Alcohol to 5 fluidounces of Water; moisten the powder with 8 ounces of the menstruum, pack firmly in the water-bath percolator, pour upon it 12 ounces of the menstruum, and set in a warm place for two days; then heat moderately, and, after one hour, begin to percolate slowly, adding menstruum to the drug, and continuing the heat and percolation until 14 fluidounces have passed, which reserve; turn off the heat, and continue the percolation with menstruum until 12 ounces more have passed, or until the drug is exhausted. Distill the Alcohol ( $\frac{3}{4}$  of the measure) from this portion, evaporate the remainder to a soft extract, dissolve it in the portion first reserved, and add enough menstruum to make a pint of the Fluid Extract. The Alcohol remaining in the drug after percolation may be recovered by distillation.

This fluid extract is now for the first time officinal. The active principle of the root, *podophyllin*, would probably be better extracted with a menstruum of all Alcohol.

### EXTRACTUM PRUNI VIRGINIANÆ FLUIDUM.

*Fluid Extract of Wild Cherry.*

Wild Cherry, in No. 20 powder, 16 $\frac{2}{3}$  oz. av.

Glycerin, 2 $\frac{1}{4}$  fl.ounces.

Diluted Alcohol,

Water, each, a sufficient quantity.

Mix the Glycerin with 6 ounces of Water, and, having

moistened the powder with the mixture, macerate in a covered vessel for forty-eight hours; transfer it to the water-bath percolator, pack it moderately, pour upon it a pint of Diluted Alcohol, and set in a warm place for one day; then heat very moderately, and, after one hour, begin to percolate slowly, adding Diluted Alcohol to the drug, and continuing the heat and percolation until 13 fluidounces have passed, which reserve; turn off the heat, and continue the percolation with Water until the drug is exhausted. Evaporate this last portion to a soft extract, which dissolve in the reserved portion, and add enough Diluted Alcohol to make a pint of the Fluid Extract. Lastly, after standing a few days, filter through muslin.

Care must be taken in making this fluid extract to heat *very moderately*, not over  $100^{\circ}$  F., as excessive heat volatilizes the Hydrocyanic Acid upon which the value of the preparation depends.

A better preparation may be made from the fresh bark of the Wild Cherry. (See Green Fluid Extracts.)

The 1870 and 1880 formulas differ very much in the quantity of Glycerin and Alcohol used, and process of making. The 1880 process is much to be preferred; but the process which is here given will be found superior to any which has been proposed.

## EXTRACTUM QUASSIÆ FLUIDUM.

### *Fluid Extract of Quassia.*

Quassia, in No. 50 powder,  $16\frac{2}{3}$  oz. av.  
Diluted Alcohol, a sufficient quantity.

Moisten the powder with 8 ounces of Diluted Alcohol, and macerate it for twenty-four hours in a close vessel; transfer it to the water-bath percolator, pack firmly, pour upon it 10 ounces of Diluted Alcohol, and set in a warm place for two days; then heat moderately, and, after one hour, begin to percolate slowly, adding Diluted Alcohol to the drug, and continuing the heat and percolation until 14 fluidounces have passed, which reserve; turn off the heat and continue the percolation with Diluted Alcohol until the drug is exhausted. Distill off the Alcohol ( $\frac{1}{2}$  of this last portion) by means of the water-bath and still, and evaporate the remainder by the water-bath to a soft extract, which dissolve in the portion previously reserved, and add enough Diluted Alcohol to make a pint of the Fluid Extract. This is a new officinal.

## EXTRACTUM RHEI FLUIDUM.

*Fluid Extract of Rhubarb.*

Rhubarb, in No. 30 powder, 16 $\frac{2}{3}$  oz. av.  
 Alcohol,  
 Water, each, a sufficient quantity.

Mix Alcohol and Water in the proportion of 18 fluid-ounces of Alcohol to 5 fluidounces of Water; moisten the powder with 8 ounces of the menstruum, pack moderately in the water-bath percolator, pour upon it twelve ounces of the menstruum, and set in a warm place for one day; then heat moderately, and, after one hour, begin to percolate slowly, adding menstruum to the drug, and continuing the heat and percolation until 14 fluidounces have passed, which reserve; turn off the heat, and continue the percolation with menstruum until 14 ounces more have passed, or until the drug is exhausted. Distill the Alcohol ( $\frac{3}{4}$  of the measure) from this portion, evaporate the remainder to a soft extract, dissolve it in the portion first reserved, and add enough menstruum to make a pint of the Fluid Extract. The Alcohol remaining in the drug after percolation may be recovered by distillation.

The formula as here given corresponds with the present official one, and differs from the 1870 in omitting Glycerin.

While the fluid extract as thus prepared represents the entire medicinal value of the root, it makes a turbid mixture when added to syrup.

This difficulty may be avoided when it is desired to make the Syrup from the Fluid Extract, by mixing two fluid-ounces of the Fluid Extract with 7 fluidounces of water and filtering, and then dissolving 16 ounces av. of Granulated Sugar in the filtrate.

## EXTRACTUM RHOIS GLABRÆ FLUIDUM.

*Fluid Extract of Rhus Glabra (Sumac).*

Rhus Glabra (Sumac "bobs"), in No.  
 30 powder, 16 $\frac{2}{3}$  oz. av.  
 Glycerin, 1 $\frac{1}{4}$  fl.oz.  
 Diluted Alcohol, a sufficient quantity.

Mix the Glycerin with enough Diluted Alcohol to make a pint, and, having moistened the powder with 8 ounces of

the mixture, allow it to macerate for twenty-four hours in a close vessel; transfer it to the water-bath percolator, pack firmly, pour upon it the remainder of the mixture, and set in a warm place for one day; then heat very moderately, and, after one hour, begin to percolate slowly, adding Diluted Alcohol to the drug, and continuing the heat and percolation until 14 fluidounces have passed, which reserve; turn off the heat, and continue the percolation with Diluted Alcohol until the drug is exhausted. Distill the Alcohol ( $\frac{1}{2}$  the measure) from this last portion, and evaporate the remainder by the water-bath to a soft extract, which dissolve in the reserved portion, and add enough Diluted Alcohol to make a pint of the Fluid Extract.

This fluid extract has come into favor of late, and is now made officinal.

## EXTRACTUM ROSÆ FLUIDUM.

### *Fluid Extract of Rose.*

Red Rose, in No. 30 powder,	16 $\frac{2}{3}$ oz. av.
Glycerin,	1 $\frac{1}{4}$ fl.oz.
Diluted Alcohol, a sufficient quantity.	

Mix the Glycerin with enough Diluted Alcohol to make a pint, and, having moistened the powder with 8 ounces of the mixture, allow it to macerate for twenty-four hours in a close vessel; transfer it to the water-bath percolator, pack firmly, pour upon it the remainder of the mixture, and set in a warm place for two days; then heat very moderately, and, after one hour, begin to percolate slowly, adding Diluted Alcohol to the drug, and continuing the heat and percolation until 14 $\frac{1}{2}$  fluidounces have passed, which reserve; turn off the heat, and continue the percolation with Diluted Alcohol until the drug is exhausted. Distill the Alcohol ( $\frac{1}{2}$  the measure) from this last portion, and evaporate the remainder by the water-bath to a soft extract, which dissolve in the reserved portion, and add enough Diluted Alcohol to make a pint of the Fluid Extract.

This new officinal will be found very convenient for flavoring medicinal preparations.



## EXTRACTUM RUBI FLUIDUM.

*Fluid Extract of Rubus (Blackberry).*

Rubus (Blackberry Root-bark), in  
 No. 50 powder,  $16\frac{2}{3}$  ounces av.  
 Glycerin,  $1\frac{1}{4}$  fl.ounces.  
 Alcohol,  
 Water, each, a sufficient quantity.

Mix the Glycerin with 8 fluidounces of Alcohol and 5 fluidounces of Water, and having moistened the powder with 8 ounces of the mixture, macerate for twenty-four hours in a close vessel; transfer to the water-bath percolator, pack firmly, pour upon it the remainder of the mixture and set in a warm place for two days; then heat moderately and after one hour begin to percolate slowly, adding to the drug, after the liquid has ceased to drop, Alcohol and Water, mixed in the proportion of 26 fluidounces of Alcohol to a pint of Water, and continue the heat and percolation until the drug is exhausted. Reserve the first 12 fluidounces that pass. Distill the Alcohol from the remainder and afterward evaporate the residue to a soft extract, which dissolve in the reserved portion and add enough of the menstruum last used to make a pint of the Fluid Extract. After standing a few days filter through muslin.

The Alcohol remaining in the drug after percolation may be recovered by distillation.

There is but little difference, except in the quantity of Glycerin used, between the former and the present official formula.

## EXTRACTUM RUMICIS FLUIDUM.

*Fluid Extract of Rumex (Yellow Dock).*

Rumex (Yellow Dock), in No. 30  
 powder,  $16\frac{2}{3}$  ounces av.  
 Diluted Alcohol, a sufficient quantity.

Moisten the powder with 8 ounces of Diluted Alcohol and macerate for twenty-four hours in a close vessel; transfer it to the water-bath percolator, pack moderately, pour upon it 12 ounces of Diluted Alcohol and set in a warm place for one day; then heat very moderately and after one hour begin to percolate slowly, adding Diluted Alcohol to the drug and continuing the heat and percolation until 14 fluidounces have passed, which reserve. Turn off the heat and continue the percolation with Diluted Alcohol until the drug is exhausted.

Distill off the Alcohol ( $\frac{1}{2}$  of this last portion) by means of the water-bath and still, and evaporate the remainder by the water-bath to a soft extract, which dissolve in the portion previously reserved and add enough Diluted Alcohol to make a pint of the Fluid Extract.

This is a new officinal.

## EXTRACTUM SABINÆ FLUIDUM.

*Fluid Extract of Savine.*

Savine (tops). in No. 40 powder,       $16\frac{2}{3}$  ounces.  
Alcohol, a sufficient quantity.

Moisten the powder with 6 ounces of Alcohol, pack firmly in the water-bath percolator, pour upon it 10 ounces of Alcohol and set in a warm place for two days; then heat moderately and after one hour begin to percolate slowly, adding Alcohol to the drug and continuing the heat and percolation until 13 fluidounces have passed, which reserve. Turn off the heat and continue the percolation with Alcohol until 13 ounces more have passed or until the drug is exhausted. Distill the Alcohol from this last portion until only 3 ounces remain, which add to the 13 ounces previously reserved to make a pint of the Fluid Extract. Lastly, after standing a few days filter through paper. The Alcohol remaining in the drug after percolation may be recovered by distillation.

The 1870 and 1880 preparations are identical.

## EXTRACTUM SANGUINARIÆ FLUIDUM.

*Fluid Extract of Sanguinaria (Bloodroot).*

Sanguinaria (Bloodroot), in No. 50  
powder,       $16\frac{2}{3}$  ounces av.  
Alcohol, a sufficient quantity.

Moisten the powder with 6 ounces of Alcohol, pack firmly in the water-bath percolator, pour upon it 10 ounces of Alcohol and set in a warm place for two days; then heat very moderately and after one hour begin to percolate slowly, adding Alcohol to the drug and continuing the heat and percolation until 14 fluidounces have passed, which reserve. Turn off the heat and continue the percolation with Alcohol until 14 ounces more have passed or until the drug is exhausted. Distill the Alcohol from this last portion until only 2 ounces remain, which add to the 14 ounces previously reserved to make a pint of the Fluid Extract. Lastly, after

standing a few days, filter through muslin. The Alcohol remaining in the drug after percolation may be recovered by distillation.

This is a new officinal.

## EXTRACTUM SARSAPARILLÆ COMPOSITUM FLUIDUM.

### *Compound Fluid Extract of Sarsaparilla.*

Sarsaparilla, in No. 30 powder,	12½ ounces av.
Liquorice Root, in No. 30 powder,	2 ounces av.
Sassafras Bark, in No. 30 powder,	1¾ ounces av.
Mezereum, in No. 30 powder,	½ ounce av.
Glycerin,	1¼ fl.ounce.
Alcohol,	
Water, each, a sufficient quantity.	

Mix the Glycerin with 6 fluidounces of Alcohol and 10 fluidounces of Water, and having moistened the mixed powders with 8 ounces of the mixture macerate for twenty-four hours in a close vessel; transfer to the water-bath percolator, pack firmly, pour upon them the remainder of the mixture and set in a warm place for two days; then heat very moderately and after one hour begin to percolate slowly, adding to the drugs, after the liquid has ceased to drop, Alcohol and Water mixed in the proportion of one part of Alcohol to two parts of Water, and continuing the heat and percolation until the drugs are exhausted. Reserve the first 13 fluidounces that pass, evaporate the remainder to a soft extract, which dissolve in the reserved portion and add enough of the Menstruum last used to make a pint of the Fluid Extract. Lastly, after standing a few days filter through muslin.

The present officinal preparation does not differ materially from the 1870, except that a much less quantity of Glycerin is now used.

## EXTRACTUM SARSAPARILLÆ FLUIDUM.

### *Fluid Extract of Sarsaparilla.*

Sarsaparilla, in No. 30 powder,	16⅔ ounces av.
Glycerin,	1¼ fl.ounces.
Alcohol,	
Water, each, a sufficient quantity.	

Mix the Glycerin with 6 fluidounces of Alcohol and 10 fluidounces of Water, and having moistened the powder with

8 ounces of the mixture macerate in a close vessel for twenty-four hours; transfer it to the water-bath percolator, pack firmly, pour upon it the remainder of the mixture and set in a warm place for two days; then heat very moderately, and after one hour begin to percolate slowly, adding, after the liquid has ceased to drop, Alcohol and Water, mixed in the proportion of one part of Alcohol to two parts of Water to the drug, and continuing the heat and percolation until the drug is exhausted. Reserve the first 13 fluidounces that pass, evaporate the remainder to a soft extract, which dissolve in the reserved portion, and add enough of the menstruum last used to make a pint of the Fluid Extract. Lastly, after standing a few days, filter through muslin.

The present official extract differs from the 1870, in the use of less Glycerin and a weaker Alcohol Menstruum.

### EXTRACTUM SCILLÆ FLUIDUM.

#### *Fluid Extract of Squill.*

Squill, in No. 20 powder, 16 $\frac{2}{3}$  ounces av.  
Alcohol, a sufficient quantity.

Moisten the powder with 6 ounces of Alcohol, pack firmly in the water-bath percolator, pour upon it 10 ounces of Alcohol and set in a warm place for two days; then heat moderately, and after one hour begin to percolate slowly, adding Alcohol to the drug and continuing the heat and percolation until 14 fluidounces have passed, which reserve. Turn off the heat and continue the percolation with Alcohol until 12 ounces more have passed, or until the drug is exhausted. Distill the Alcohol from this last portion until only 2 ounces remain, which add to the 14 ounces previously reserved to make a pint of the Fluid Extract. Lastly, after standing a few days filter through paper. The Alcohol remaining in the drug after percolation may be recovered by distillation.

The 1870 formula directed a menstruum composed of Alcohol, Water and Glycerin, instead of Alcohol as is now used.

### EXTRACTUM SCUTELLARIÆ FLUIDUM.

#### *Fluid Extract of Scutillaria (Skullcap).*

Scutellaria (Skullcap), in No. 30 powder, 16 $\frac{2}{3}$  ounces.  
Alcohol,  
Water, each, a sufficient quantity.

Mix 10 fluidounces of Alcohol with 16 fluidounces of

Water, moisten the powder with 10 ounces of the mixture and macerate for twenty-four hours in a close vessel, transfer to the water-bath percolator, pack moderately, pour upon it 10 ounces of menstruum and set in a warm place for one day; then heat moderately, and after one hour begin to percolate slowly, adding menstruum to the drug, and continuing the heat and percolation until 13 fluidounces have passed, which reserve. Turn off the heat, and continue the percolation with menstruum until the drug is exhausted. Evaporate this last portion by the water-bath to a soft extract, which dissolve in the portion previously reserved and add enough menstruum to make a pint of the Fluid Extract. Lastly, after standing a few days filter through muslin. This is a new officinal. A better fluid extract may be made from the fresh herb.

### EXTRACTUM SENEGÆ FLUIDUM.

#### *Fluid Extract of Senega (Seneka).*

Senega, in No. 40 powder,	16 $\frac{2}{3}$ ounces av.
Water of Ammonia,	3 fl.drachms.
Alcohol,	
Water, each, a sufficient quantity.	

Mix Alcohol and Water in the proportion of 19 fluidounces of Alcohol to 8 fluidounces of Water, and, having moistened the powder with 8 ounces of the mixture, macerate it for twenty-four hours in a close vessel; transfer it to the water-bath percolator, pack it firmly, pour upon it 12 ounces of the menstruum and set in a warm place for one day; then heat very moderately, and after one hour begin to percolate slowly, adding menstruum to the drug and continuing the heat and percolation until 14 ounces have passed, which reserve. Turn off the heat and continue the percolation with the menstruum until 12 ounces more have passed, or until the drug is exhausted. Distill the Alcohol ( $\frac{2}{3}$  of the measure), from this last portion and evaporate the remainder to a soft extract by means of a water-bath, dissolve this in the portion previously reserved, and add the Water of Ammonia, and afterward enough menstruum to make a pint of the Fluid Extract. Lastly, after standing a few days filter through muslin. The Alcohol remaining in the drug after percolation may be recovered by distillation.

This Fluid Extract as now made does not gelatinize, and for that reason is a great improvement over the 1870 preparation.

## EXTRACTUM SENNA FLUIDUM.

*Fluid Extract of Senna.*

Senna, in No. 20 powder,                    16 $\frac{3}{8}$  ounces av.  
Alcohol,  
Water, each, a sufficient quantity.

Mix Alcohol and Water in the proportion of 13 fluid-ounces of Alcohol to 16 fluidounces of Water. Moisten the powder with 10 ounces of the mixture and macerate for twenty-four hours in a closed vessel; transfer to the water-bath percolator, pack moderately; pour upon it 10 ounces of menstruum and set in a warm place for one day; then heat very moderately and after one hour begin to percolate slowly, adding menstruum to the drug and continuing the heat and percolation until 13 ounces have passed, which reserve. Turn off the heat and continue the percolation with menstruum until the drug is exhausted. Distill the Alcohol from this last portion. Evaporate the remainder to a soft extract, which dissolve in the portion previously reserved, and add enough menstruum to make a pint of the Fluid Extract. Lastly, after standing a few days filter through muslin.

The 1880 formula for this preparation is considerably different from any of its predecessors. The 1870 preparation contained 50 per cent. of Glycerin, which was needless.

## EXTRACTUM SERPENTARIÆ FLUIDUM.

*Fluid Extract of Serpentaria.*

Serpentaria, in No. 50 powder.            16 $\frac{2}{3}$  ounces av.  
Alcohol,  
Water, each, a sufficient quantity.

Mix Alcohol and Water in the proportion of 18 fluid-ounces of Alcohol to 5 fluidounces Water. Moisten the powder with 8 ounces of the menstruum, pack firmly in the water-bath percolator, pour upon it 12 ounces of the menstruum and set in a warm place for one day; then heat very moderately, and after one hour begin to percolate slowly, adding menstruum to the drug and continuing the heat and percolation until 14 fluidounces have passed, which reserve. Turn off the heat and continue the percolation with menstruum until 12 ounces more have passed, or until the drug is exhausted. Distill the Alcohol ( $\frac{3}{4}$  of the measure) from this portion. Evaporate the remainder to a soft

extract, dissolve it in the portion first reserved, and add enough menstrum to make a pint of the Fluid Extract. The Alcohol remaining in the drug after percolation may be recovered by distillation.

The 1870 Pharmacopœia directs all Alcohol to be used as the menstrum for making this Fluid Extract.

### EXTRACTUM SPIGELIÆ FLUIDUM.

*Fluid Extract of Spigelia (Pink Root).*

Spigelia (Pink Root), in No. 50  
powder, 16 $\frac{2}{3}$  ounces av.  
Diluted Alcohol, a sufficient quantity.

Moisten the powder with 8 ounces of Diluted Alcohol and macerate for twenty-four hours in a close vessel; transfer it to the water-bath percolator, pack firmly, pour upon it 10 ounces of Diluted Alcohol and set in a warm place for two days; then heat moderately and after one hour begin to percolate slowly, adding Diluted Alcohol to the drug and continuing the heat and percolation until 14 fluidounces have passed, which reserve. Turn off the heat and continue the percolation with Diluted Alcohol until the drug is exhausted. Distill off the Alcohol ( $\frac{1}{2}$  of this last portion) by means of the water-bath and still and evaporate the remainder by the water-bath to a soft extract, which dissolve in the portion previously reserved and add enough Diluted Alcohol to make a pint of the Fluid Extract.

The 1870 formula directed half a pint of Glycerin, which was unnecessary, and has been omitted.

### EXTRACTUM STILLINGIÆ FLUIDUM.

*Fluid Extract of Stillingia (Queensroot).*

Stillingia, in No. 30 powder, 16 $\frac{2}{3}$  ounces av.  
Diluted Alcohol, a sufficient quantity.

Moisten the powder with 8 ounces of Diluted Alcohol and macerate it for twenty-four hours in a close vessel; transfer it to the water-bath percolator, pack firmly, pour upon it 10 ounces of Diluted Alcohol and set in a warm place for two days; then heat moderately and after one hour begin to percolate slowly, adding Diluted Alcohol to the drug and continuing the heat and percolation until 14 fluidounces have passed, which reserve. Turn off the heat and continue the percolation with Diluted Alcohol until the drug is exhausted.



Distill off the Alcohol ( $\frac{1}{2}$  of this last portion) by means of the water-bath and still, and evaporate the remainder by the water-bath to a soft extract, which dissolve in the portion previously reserved and add enough Diluted Alcohol to make a pint of the Fluid Extract.

The 1870 formula directed 4 fluidounces of Glycerin, which was unnecessary and has now been omitted.

A fluid extract is also made from the green root, which is claimed as much superior.

## EXTRACTUM STRAMONII FLUIDUM.

### *Fluid Extract of Stramonium.*

Stramonium Seed, in No. 40 powder, 16 $\frac{2}{3}$  ounces av.  
 Alcohol,  
 Water, each, a sufficient quantity.

Mix Alcohol and Water in the proportion of 18 fluidounces of Alcohol to 5 fluidounces of Water. Moisten the powder with 10 ounces of the menstruum, pack very firmly in the water-bath percolator, pour upon it 12 ounces of the menstruum and set in a warm place for one day; then heat moderately, and after one hour begin to percolate slowly, adding menstruum to the drug and continuing the heat and percolation until 14 fluidounces have passed, which reserve. Turn off the heat and continue the percolation with menstruum until 12 ounces more have passed or until the drug is exhausted. Distill the Alcohol ( $\frac{3}{4}$  of the measure) from this portion, evaporate the remainder to a soft extract, dissolve it in the portion first reserved and add enough menstruum to make a pint of Fluid Extract. The Alcohol remaining in the drug after percolation may be recovered by distillation. This is a new officinal. It is also made from the green leaves.

## EXTRACTUM TARAXACI FLUIDUM.

### *Fluid Extract of Taraxacum (Dandelion).*

Taraxacum (Dandelion Root), in  
 No. 20 powder, 16 $\frac{2}{3}$  ounces av.  
 Alcohol,  
 Water, each, a sufficient quantity.

Mix 9 fluidounces of Alcohol with 12 fluidounces of Water, moisten the powder with 10 ounces of the mixture and macerate for twenty-four hours in a close vessel; transfer to the

water-bath percolator, pack moderately, pour upon it 10 ounces of the menstruum and set in a warm place for one day; then heat very moderately and after one hour begin to percolate slowly, adding menstruum to the drug and continuing the heat and percolation until 14 fluidounces have passed, which reserve. Turn off the heat and continue the percolation with the menstruum until the drug is exhausted. Distill off the Alcohol from this last portion and evaporate the remainder by the water-bath to a soft extract, which dissolve in the portion previously reserved and add enough menstruum to make a pint of the Fluid Extract. After standing a few days filter through muslin.

The present officinal formula differs from the 1870 in not containing Glycerin, and in using a weaker alcoholic menstruum. While the omission of the Glycerin is a decided advantage, the propriety of using a weaker menstruum is doubtful, as the drug so readily softens with its use. This extract may be made from the green root.

#### EXTRACTUM TRITICI FLUIDUM.

*Fluid Extract of Triticum (Couch Grass Root).*

Triticum (Couch Grass Root), finely  
cut, 16 $\frac{2}{3}$  ounces av.  
Alcohol,  
Water, each, a sufficient quantity.

Pack the drug in the water-bath percolator, pour upon it sufficient water to cover it and heat to boiling; then begin to percolate, adding water to the drug and continuing the heat and percolation until the drug is exhausted. Evaporate the percolate to 12 $\frac{1}{2}$  fluidounces and having added 3 $\frac{1}{2}$  ounces of Alcohol to it set aside for two days. Then filter the liquid and add through the filter enough Alcohol and Water, mixed in the proportion of four parts of Alcohol to one part of Water, to make a pint of the Fluid Extract.

This is a new officinal.

#### EXTRACTUM UVÆ URSI FLUIDUM.

*Fluid Extract of Uva Ursi.*

Uva Ursi, in No. 30 powder, 16 $\frac{2}{3}$  ounces av.  
Glycerin, 1 $\frac{1}{4}$  fl. ounces.  
Diluted Alcohol, a sufficient quantity.

Mix the Glycerin with enough Diluted Alcohol to make a

pint, and having moistened the powder with 10 ounces of the mixture, allow it to macerate for twenty-four hours in a close vessel; transfer it to the water-bath percolator, pack firmly, pour upon it the remainder of the mixture and set in a warm place for one day; then heat moderately, and after one hour begin to percolate slowly, adding Diluted Alcohol to the drug and continuing the heat and percolation until 14 fluidounces have passed, which reserve. Turn off the heat and continue the percolation with Diluted Alcohol until the drug is exhausted. Distill the Alcohol ( $\frac{1}{2}$  the measure) from this last portion, and evaporate the remainder by the water-bath to a soft extract, which dissolve in the reserved portion and add enough Diluted Alcohol to make a pint of the Fluid Extract. A less quantity of Glycerin is now used than was directed in the 1870 formula.

## EXTRACTUM VALERIANÆ FLUIDUM.

### *Fluid Extract of Valerian.*

Valerian, in No. 50 powder,                    16 $\frac{2}{3}$  ounces av.  
Alcohol,  
Water, each, a sufficient quantity.

Mix Alcohol and Water in the proportion of 19 fluidounces of Alcohol to 8 fluidounces of Water, and, having moistened the powder with 8 ounces of the mixture, macerate it for twenty-four hours in a close vessel, transfer it to the water-bath percolator, pack it firmly, pour upon it 10 ounces of the menstruum and set in a warm place for two days; then heat very moderately, and after one hour begin to percolate slowly, adding menstruum to the drug and continuing the heat and percolation until 14 ounces have passed, which reserve. Turn off the heat and continue the percolation with the menstruum until 14 ounces more have passed, or until the drug is exhausted. Distill the Alcohol ( $\frac{2}{3}$  of the measure) from this last portion and evaporate the remainder to a soft extract by means of a water-bath; dissolve this in the portion previously reserved and add enough menstruum to make a pint of the Fluid Extract. The Alcohol remaining in the drug after percolation may be recovered by distillation.

The 1870 formula directed stronger Alcohol as the menstruum for exhausting the root, but the present menstruum will no doubt as fully represent the medicinal value of the drug.

## EXTRACTUM VERATRI VIRIDIS FLUIDUM.

*Fluid Extract of Veratrum Viride (American Hellebore).*

Veratrum Viride, in No. 60 powder,  
Alcohol, a sufficient quantity. 16 $\frac{2}{3}$  ounces av.

Moisten the powder with 6 ounces of Alcohol, pack firmly in the water-bath percolator, pour upon it 10 ounces of Alcohol and set in a warm place for two days; then heat very moderately and after one hour begin to percolate slowly, adding Alcohol to the drug and continuing the heat and percolation until 12 fluidounces have passed, which reserve. Turn off the heat and continue the percolation with Alcohol until 12 ounces more have passed or until the drug is exhausted. Distill the Alcohol from this last portion until only 4 ounces remain, which add to the 12 ounces previously reserved to make a pint of the Fluid Extract. Lastly, after standing a few days, filter through paper. The Alcohol remaining in the drug after percolation may be recovered by distillation. The 1870 and 1880 preparations are identical. A superior Fluid Extract may be made from the green root.

## EXTRACTUM VIBURNI FLUIDUM.

*Fluid Extract of Viburnum (Black Haw).*

Viburnum (Black Haw), in No. 50 powder, 16 $\frac{2}{3}$  ounces av.  
Alcohol,  
Water, each, a sufficient quantity.

Mix Alcohol and Water in the proportion of 19 fluidounces of Alcohol to 8 fluidounces of Water, and having moistened the powder with 8 ounces of the mixture, macerate it for 24 hours in a close vessel, transfer it to the water-bath percolator, pack it firmly, pour upon it 10 ounces of the menstruum and set in a warm place for two days; then heat very moderately and after one hour begin to percolate slowly, adding menstruum to the drug and continuing the heat and percolation until 14 ounces have passed, which reserve. Turn off the heat and continue the percolation with the menstruum until 12 ounces more have passed, or until the drug is exhausted. Distill the Alcohol ( $\frac{2}{3}$  of the measure) from this last portion and evaporate the remainder to a soft extract by means of a water-bath; dissolve this in the portion previously reserved and add enough menstruum to

make a pint of the fluid extract. The Alcohol remaining in the drug after percolation may be recovered by distillation.

This is a new officinal; it is also prepared from the fresh green root bark.

### EXTRACTUM XANTHOXYLI FLUIDUM.

*Fluid Extract of Xanthoxylum (Prickly Ash).*

Xanthoxylum (Prickly Ash), in

No. 40 powder,

16 $\frac{2}{3}$  ounces av.

Alcohol, a sufficient quantity.

Moisten the powder with 6 ounces of Alcohol, pack firmly in the water-bath percolator, pour upon it 10 ounces of Alcohol and set in a warm place for two days; then heat very moderately, and after one hour begin to percolate slowly, adding Alcohol to the drug and continuing the heat and percolation until 14 fluidounces have passed, which reserve. Turn off the heat and continue the percolation with Alcohol until 14 ounces more have passed, or until the drug is exhausted. Distill the Alcohol from this last portion until only two ounces remain, which add to the 14 ounces previously reserved to make a pint of the Fluid Extract. Lastly, after standing a few days, filter through paper. The Alcohol remaining in the drug after percolation may be recovered by distillation.

This is a new officinal.

### EXTRACTUM ZINGIBERIS FLUIDUM.

*Fluid Extract of Ginger.*

Ginger, in No. 40 powder,

16 $\frac{2}{3}$  ounces av.

Alcohol, a sufficient quantity.

Moisten the powder with 6 ounces of Alcohol, pack firmly in the water-bath percolator, pour upon it 10 ounces of Alcohol and set in a warm place for two days; then pack very moderately and after one hour begin to percolate slowly, adding Alcohol to the drug and continuing the heat and percolation until 14 fluidounces have passed, which reserve. Turn off the heat and continue the percolation with Alcohol until 14 ounces more have passed or until the drug is exhausted. Distill the Alcohol from this last portion until only 2 ounces remain, which add to the 14 ounces previously reserved to make a pint of the Fluid Extract. Lastly, after standing a few days, filter through paper. The Alcohol remaining in the drug after percolation may be recovered by distillation.

The 1870 and 1880 preparations are identical.

## ACETIC FLUID EXTRACTS.

A few Fluid Extracts made with Acetic Acid, instead of an Alcoholic menstruum, have some merit and reputation; as they are all made by the same general formula and with the same menstruum it is unnecessary to repeat the formula for each.

## GENERAL FORMULA FOR ACETIC FLUID EXTRACTS.

To complete the formula for any Acetic Fluid Extract, substitute the name of the drug and the required fineness of powder in the following general formula:

The Drug in No.— powder,	16 $\frac{2}{3}$ ounces av.
Acetic Acid,	16 fl.ounces.
Water, a sufficient quantity.	

Moisten the powder with the Acetic Acid, and macerate in a closed earthenware, or glass vessel, for twenty-four hours; transfer it to the water-bath percolator, pack moderately, pour upon it a pint of water, and heat at once; after one hour begin to percolate adding water to the drug and continuing the heat and percolation until 14 fluidounces have passed, which reserve. Turn off the heat and continue the percolation with Water until the drug is exhausted. Evaporate the last portion to two fluidounces and add to the reserved portion to make a pint of the Fluid Extract. After standing a few days filter through muslin.

The following drugs are those from which Acetic Fluid Extracts are usually prepared. They may be made from any other drugs which yield their virtues to Acetic Acid.

Latin Name.	Common Name.	Part used.	Fineness of Powder.
Digitalis, . . .	Foxglove, . . .	leaves, . . .	No. 40.
Ergota, . . .	Ergot, . . .	fungus, . . .	No. 50.
Lobelia, . . .	Indian Tobacco, .	herb, . . .	No. 40.
Sanguinaria, .	Bloodroot, . . .	root, . . .	No. 50.
Scilla, . . .	Squill, . . .	bulb, . . .	No. 20.

To make the 1870 Vinegars of these Fluid Extracts mix two fluidounces with 14 fluidounces of water.

To make the 1880 Vinegars, mix 1 $\frac{2}{3}$  fluidounces of these Extracts with enough water to make a pint.

To make Syrup of Squill, mix 1 fluidounce of the Acetic Fluid Extract of Squill with 15 fluidounces of Syrup.

## AQUEOUS FLUID EXTRACTS.

In this class of Fluid Extracts are included all those in which water is mainly employed for extracting their medicinal value, and in which Alcohol would be objectionable, either as a menstruum, or for the uses required. In some, however, Alcohol is added as a preservative.

But few Aqueous Fluid Extracts are used, but it is evident that a larger variety might be employed with advantage by the profession. Any drug which yields its medicinal value to water may very properly be exhibited in an Aqueous Fluid Extract, and the formulæ which follow will be sufficiently explicit for making any preparation of this kind that may be desired.

### FLUID EXTRACT BAEI FRUIT.

*Bael Fructus, Bengal Quince, Ægle Marmelos, Indian Bael.*

Bael Fruit, cut in pieces,	16 ounces av.
Water,	12 pints.
Alcohol,	2 fl.ounces.

Put the Bael Fruit loosely in the water-bath percolator, pour upon it 4 pints of Water and macerate in a warm place for 12 hours, then draw off the liquid by the stop-cock and reserve. Pour on the drug again 4 pints of Water, macerate for two hours and draw off as before. Mix the liquids, evaporate them by gentle heat to 14 fluidounces, and after straining add 2 fluidounces of Alcohol to preserve the extract and complete the measure. This is an astringent aromatic demulcent officinal in the British Pharmacopœia, but little used in this country.

### FLUID EXTRACT OF BROOM TOPS, AQUEOUS.

*Sarothamnus Scoparius.*

Broom Tops, in No. 20 powder,	16 $\frac{2}{3}$ ounces av.
Glycerin,	5 fl.ounces.
Water, a sufficient quantity.	

Moisten the drug with 10 ounces of Water and macerate for 24 hours in a warm place ; then pack moderately in the water-bath percolator, pour upon it a pint of Water, heat



moderately, and after one hour begin to percolate, adding water to the drug and continuing the heat and percolation until the drug is exhausted. Evaporate the percolate to 10 fluidounces, filter and add through the filter enough Water to make 11 fluidounces, then add the Glycerin to make a pint of the Fluid Extract.

## FLUID EXTRACT CASCARA SAGRADA, AQUEOUS.

*Rhamnus Prushiana.*

Cascara Sagrada Bark, in No. 30	
powder,	16 $\frac{2}{3}$ ounces av.
Glycerin,	5 fl.ounces.
Water, a sufficient quantity.	

Mix the Glycerin with a pint of Water and having moistened the powder with 10 ounces of the mixture, macerate for 24 hours in a warm place; then pack moderately in the water-bath percolator, pour upon it the remainder of the mixture, heat moderately, and after one hour begin to percolate, adding Water to the drug and continuing the heat and percolation until the drug is exhausted. Evaporate the percolate, by means of a water-bath, to a pint, and after standing a few days filter through muslin.

A Fluid Extract of Cascara Sagrada is also made with Diluted Alcohol as a menstruum, but the Aqueous Extract seems to contain all the valuable medicinal properties of the drug.

## FLUID EXTRACT GOLDEN SEAL, AQUEOUS.

*Hydrastis without Alcohol. Fluid Hydrastis.*

Golden Seal (Hydrastis), in No. 30	
powder,	16 $\frac{2}{3}$ ounces av.
Glycerin,	6 fl.ounces.
Water, a sufficient quantity.	

Mix the Glycerin with 10 ounces of Water, moisten the powder with 8 ounces of the mixture, and macerate for twenty-four hours in a warm place; transfer to the water-bath percolator, pack moderately, pour the remainder of the liquid upon it and set in a warm place for two days, then heat moderately and after one hour begin to percolate, adding Water to the drug and continuing the heat and percolation until 13 fluidounces have passed, which reserve. Turn off the heat and continue the percolation with Water until

the drug is exhausted. Evaporate this last portion to 3 fluid-ounces, which add to the reserved portion to make a pint of the fluid extract, and after standing a few days filter through muslin.

### FLUID EXTRACT IPECAC, AQUEOUS.

Ipecac, in No. 30 powder,	16 $\frac{2}{3}$ ounces av.
Glycerin,	6 fl.ounces.
Water, a sufficient quantity.	

Moisten the powder with 12 ounces of Water and macerate for 24 hours, then pack moderately in the water-bath percolator, pour upon it a pint of Water and heat moderately at once. After one hour begin to percolate slowly, adding Water to the drug, and continuing the heat and percolation until the drug is exhausted. Evaporate the percolate to 10 fluidounces, filter, and add enough Water through the filter to make 10 fluidounces; then add the Glycerin to make a pint of the Fluid Extract.

This formula makes a preparation which is essentially the same as the official Fluid Extract; but it is much easier and less complicated to prepare.

To make Syrup of Ipecac, mix 1 fluidounce of this Extract with 15 fluidounces of Syrup.

### FLUID EXTRACT LIQUORICE, AQUEOUS.

*For Quinine Mixtures, etc.*

Liquorice Root, in No. 20	
powder,	16 $\frac{2}{3}$ ounces av.
Glycerin,	5 fl.ounces.
Water of Ammonia,	3 fl.ounces.
Water, a sufficient quantity.	

Mix the Water of Ammonia with 8 ounces of Water, moisten the drug with the mixture and set in a warm place for one day, then pack moderately in the water-bath percolator, pour upon it a pint of Water, heat at once, and after one hour begin to percolate slowly, adding Water and continuing the heat and percolation until the drug is exhausted. Reserve the first half pint that passes, evaporate the remainder to 3 fluidounces; mix it with the reserved portion, and add the Glycerin to make a pint of the Fluid Extract. After standing a few days filter through muslin. This is an excellent adjuvant for quinine and other bitter medicines.

To make Elixir of Liquorice for quinine mixtures, mix two fluidounces of this Fluid Extract with six fluidounces of Syrup of Wild Cherry and half a pint of simple elixir. To make Syrup of Liquorice, mix two fluidounces of the Fluid Extract with 14 fluidounces of Syrup.

### FLUID EXTRACT OF OPIUM, AQUEOUS.

Powdered Opium,	4 ounces av.
Glycerin,	5 fl.ounces.
Water, a sufficient quantity.	

Pour 8 ounces of Boiling Water upon the Opium, and after macerating for 2 hours, having covered the perforated diaphragm of the water-bath percolator with a coarse piece of muslin, pour the mixture upon it, heat to about 185° F. and begin to percolate, adding Water to the drug and continuing the heat and percolation until the drug is exhausted. Evaporate the percolate by means of a water-bath until it is reduced to 10 fluidounces, filter and add enough Water through the filter to make the measure 11 fluidounces, then add the Glycerin to make a pint of the Fluid Extract.

Each minim of this Extract represents about  $\frac{1}{4}$  grain Opium.

Manufacturers have no definite standard for Fluid Extract of Opium, many of them making it only the same strength as the Tincture.

### FLUID EXTRACT SENECA, AQUEOUS.

*For making Syrup of Senega.*

Senega Root, in No. 20	
powder,	16 $\frac{2}{3}$ ounces av.
Glycerin,	5 fl.ounces.
Water of Ammonia,	$\frac{3}{4}$ fl.ounces.
Water, a sufficient quantity.	

Moisten the powder with 10 ounces of Water and macerate for 24 hours, then pack moderately in the water-bath percolator; pour upon it a pint of Water, heat very moderately and after one hour begin to percolate, adding Water to the drug and continuing the heat and percolation until the drug is exhausted. Evaporate the percolate to 10 fluidounces, add the Ammonia and strain through muslin, adding through the strainer enough Water to make the measure 11 fluidounces, and then add the Glycerin to make a pint of the Fluid Extract.

In evaporating this Extract quite a precipitate of albuminous and starchy matter is formed; when the Water of Ammonia is added the valuable portion of this precipitate, *Polygalic Acid*, is dissolved, and the remainder, which is worthless, is retained on the filter.

To make Syrup of Senega mix 2 fluidounces of this Extract with 14 fluidounces of Syrup.

### FLUID EXTRACT SENNA, AQUEOUS.

Senna, in No. 12 powder,	16 $\frac{2}{3}$ ounces av.
Glycerin,	5 fl.ounces.
Water, a sufficient quantity.	

Pour upon the Senna 4 pints of hot Water and steep with gentle heat for two hours, pour off the liquid, press the drug gently, and reserve the liquid; pour two pints more of hot water upon it, steep for half an hour, pour off and press as before, adding the liquid to the reserved portion; again pour on two pints of Water, steep, pour off and press as before, adding the liquid to the reserved portion. Evaporate the liquid to 10 fluidounces, strain, add through the strainer enough Water to make 11 fluidounces, and then add the Glycerin to make a pint of the Fluid Extract.

Aqueous Fluid Extract of Senna does not "gripe" as does that made with a partly Alcoholic menstruum. Senna leaves may be percolated first with Alcohol, to remove the principles which produce griping, and a fluid extract may then be made with Water or Diluted Alcohol, in the ordinary manner.

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### COMPOUND FLUID EXTRACTS.

Under this heading are included all Fluid Extracts that are made from two or more powdered drugs combined. As all but two are unofficinal, they are called by their ordinary commercial or trade names, as they are known and quoted in the market.

Compound Fluid Extracts may be made by mixing the Fluid Extracts of the drugs of which they are composed, in the same proportion as is designated of the drugs in the formulas.

The prescribing and use of Compound Fluid Extracts should be discouraged as much as possible, for the reason

that, as made by different manufacturers, they represent varying proportions of the drugs of which they are composed, and are therefore indefinite.

## FLUID EXTRACT AROMATIC; U. S.

### *Extractum Aromaticum Fluidum.*

This Fluid Extract is made from Aromatic Powder, and is officinal. See *Extractum Aromaticum Fluidum*.

## FLUID EXTRACT BLACKBERRY COMPOUND.

Blackberry Root, in No. 40 powder,	12 1/2 oz. av.
Cinnamon,	2 "
Nutmeg,	1 "
Coriander,	1 "
Glycerin,	2 fl.ounces.
Alcohol,	
Water, each, a sufficient quantity.	

Mix the Glycerin with 10 fluidounces of Alcohol and 4 fluidounces of Water, and having moistened the powders, which have been previously mixed, with 6 ounces of the mixture, pack firmly in the water-bath percolator, pour upon them the remainder of the mixture and set in a warm place for two days; then heat very moderately and after one hour begin to percolate, adding to the drug after the liquid has ceased to drop, Alcohol and Water mixed in the proportion of 19 fluidounces of Alcohol to 8 fluidounces of Water, and continuing the heat and percolation until 14 fluidounces have passed, which reserve. Turn off the heat and continue the percolation with Alcohol and Water mixed as last directed until the drugs are exhausted. Distill off the Alcohol ( $\frac{2}{3}$  of the measure) from this last portion, and evaporate the remainder to a soft extract which dissolve in the reserved portion, and add enough of the menstruum last directed to make a pint of the Fluid Extract. Lastly, after standing a few days, filter through muslin.

The Alcohol remaining in the drugs after percolation may be recovered by distillation. A good Blackberry Cordial may be made by mixing 4 fluidounces of this Fluid Extract with 12 fluidounces of Simple Elixir, and filtering. This is an excellent combination for dysentery, summer-complaint, etc.

## FLUID EXTRACT BLACK COHOSH COMPOUND.

Black Cohosh, in No. 40 powder,		6 ounces av.
Wild Cherry,	20	4
Liquorice Root,	30	4
Ipecac,	40	1
Senega,	40	1
Alcohol,		
Water, each, a sufficient quantity.		

Mix Alcohol and Water in the proportion of 19 fluid-ounces of Alcohol to 8 fluidounces of Water, and having moistened the mixed powders with 8 ounces of the mixture, macerate for 24 hours in a close vessel; transfer to the water-bath percolator, pack firmly, pour upon them 10 ounces of the menstruum and set in a warm place for two days; then heat very moderately and after one hour begin to percolate slowly, adding menstruum to the drugs and continuing the heat and percolation until 14 ounces have passed, which reserve. Turn off the heat and continue the percolation with the menstruum until 12 ounces more have passed or until the drugs are exhausted. Distill the Alcohol ( $\frac{2}{3}$  of the measure) from this last portion, and evaporate the remainder to a soft extract, by means of a water-bath, dissolve this in the portion previously reserved and add enough menstruum to make a pint of the Fluid Extract.

The Alcohol remaining in the drugs after percolation may be recovered by distillation.

This is a valuable stimulating expectorant useful in recovery from influenza, pneumonia, etc.

## FLUID EXTRACT BLUE COHOSH COMPOUND.

Blue Cohosh, in No. 40 powder,		8 $\frac{2}{3}$ ounces av.
Cramp Bark,	30	3
Unicorn Root,	40	3
Celery Root,	40	2
Alcohol,		
Water, each, a sufficient quantity.		

Mix Alcohol and Water in the proportion of 19 fluid-ounces of Alcohol to 8 fluidounces of Water, and having moistened the mixed powders with 8 ounces of the mixture, macerate them for 24 hours in a close vessel; transfer to the water-bath percolator, pack firmly, pour upon them 10 ounces of the menstruum and set in a warm place for two days; then

heat moderately and after one hour begin to percolate slowly, adding menstruum to the drugs and continuing the heat and percolation until 14 ounces have passed, which reserve. Turn off the heat and continue the percolation with the menstruum until 12 ounces more have passed or until the drugs are exhausted. Distill the Alcohol ( $\frac{2}{3}$  of the measure) from this last portion, and evaporate the remainder to a soft extract by means of a water-bath, dissolve this in the portion previously reserved and add enough menstruum to make a pint of the Fluid Extract.

The Alcohol remaining in the drug after percolation may be recovered by distillation.

This combination makes an excellent Uterine Tonic for general use and is particularly adapted to the female derangements which occur at the change of life.

#### FLUID EXTRACT BUCHU AND JUNIPER, WITH ACETATE OF POTASSIUM.

Buchu Leaves, in No. 40 powder,	8 ounces av.
Juniper Berries,	4 “
Acetate of Potassium,	5 “
Alcohol,	
Water, each, a sufficient quantity.	

Mix Alcohol and Water in the proportion of 19 fluidounces of Alcohol to 8 fluidounces of Water, and having moistened the mixed powders with 8 ounces of the mixture, macerate for 24 hours in a close vessel, transfer to the water-bath percolator, pack firmly, pour upon them 10 ounces of the menstruum and set in a warm place for one day; then heat very moderately and after one hour begin to percolate slowly, adding menstruum to the drugs and continuing the heat and percolation until 10 ounces have passed, which reserve. Turn off the heat and continue the percolation with the menstruum until 10 ounces more have passed or until the drugs are exhausted. Distill the Alcohol ( $\frac{2}{3}$  of the measure) from this last portion, and evaporate the remainder to a soft extract by means of a water-bath; dissolve this in the portion previously reserved, add the Acetate of Potassium and enough menstruum to make a pint of the Fluid Extract. The Alcohol remaining in the drug after percolation may be recovered by distillation.

Four fluidounces of this Fluid Extract mixed with 12 fluidounces of Simple Elixir makes Elixir Buchu, Juniper and Acetate of Potassium. It should be filtered after mixing. This makes a valuable diuretic preparation.



## FLUID EXTRACT BUCHU AND PAREIRA BRAVA.

Buchu Leaves, in No. 40 powder,	8 ounces av.
Pareira Brava, " 50 "	8 "
Alcohol,	
Water, each, a sufficient quantity.	

Mix Alcohol and Water in the proportion of 19 fluid-ounces of Alcohol to 8 fluidounces of Water, and having moistened the mixed powders with 10 ounces of the mixture, macerate for 24 hours in a close vessel; transfer to the water-bath percolator, pack firmly, pour upon them 10 ounces of the menstruum, and set in a warm place for two days, then heat very moderately, and after one hour begin to percolate slowly, adding menstruum to the drugs, and continuing the heat and percolation until 13 ounces have passed, which reserve. Turn off the heat and continue the percolation with the menstruum until 12 ounces more have passed or until the drugs are exhausted. Distill the Alcohol ( $\frac{2}{3}$  of the measure) from this last portion, and evaporate the remainder to a soft extract by means of a water-bath; dissolve this in the portion previously reserved and add enough menstruum to make a pint of the Fluid Extract. The Alcohol remaining in the drug after percolation may be recovered by distillation.

## FLUID EXTRACT BUCHU COMPOUND.

Buchu Leaves, in No. 50 powder,	4 $\frac{2}{3}$ ounces av.
Juniper Berries, " "	4 "
Cubebs, " "	4 "
Uva Ursi, " "	4 "
Alcohol, a sufficient quantity.	

Mix the powders, moisten them with 10 ounces of Alcohol, pack firmly in the water-bath percolator, pour upon them 10 ounces of Alcohol, and set in a warm place for two days; then heat very moderately, and after one hour begin to percolate, adding Alcohol to the drugs and continuing the heat and percolation until 14 fluidounces have passed, which reserve. Turn off the heat and continue the percolation with Alcohol until 12 ounces have passed, or until the drugs are exhausted. Distill the Alcohol from this last portion until only 2 ounces remain, which add to the 14 ounces previously reserved to make a pint of the Fluid Extract. Lastly, after standing a few days, filter through muslin. The

Alcohol remaining in the drugs after percolation may be recovered by distillation. This is a valuable preparation in diseases of the bladder, incontinence of urine, etc.

### FLUID EXTRACT OF CARDAMOM COMPOUND.

Cardamom Seeds, in No. 50	
powder,	6½ ounces av.
Cinnamon Bark,       “	6½       “
Caraway Seed,       “	2       “
Cochineal,       “	1½       “
Alcohol,	
Water, each, a sufficient quantity.	

Mix 3 measures of Alcohol with one measure of Water, and having mixed the powders, moisten them with 6 ounces of the menstruum, pack firmly in the water-bath percolator, pour upon them 10 ounces of menstruum and set in a warm place for two days; then heat very moderately, and after one hour begin to percolate, adding menstruum to the drugs, and continuing the heat and percolation until 14 fluidounces have passed, which reserve. Turn off the heat and continue the percolation with menstruum until the drugs are exhausted. Distill the Alcohol ( $\frac{3}{4}$  of the measure) from this last portion, evaporate the residue to a soft extract, which dissolve in the reserved portion and add enough menstruum to make a pint of the Fluid Extract. The Alcohol remaining in the drugs after percolation may be recovered by distillation.

To make Compound Tincture of Cardamom, mix 1 fluidounce of this Fluid Extract with 2 fluidounces of Glycerin and 17 fluidounces of Diluted Alcohol.

### FLUID EXTRACT CINCHONA AROMATIC.

Cinchona Bark, in No. 50 powder,	8½ ounces av.
Cinnamon Bark,       “   50       “	4       “
Nutmeg       “   50       “	2       “
Bitter Orange Peel, “   20       “	2       “
Glycerin,	2 fl.ounces.
Alcohol,	
Water, each, a sufficient quantity.	

Mix the Glycerin with 12 fluidounces of Alcohol and 2 fluidounces of Water, and having moistened the powders, which have been previously mixed, with 6 ounces of the mixture, pack firmly in the water-bath percolator, pour upon them the remainder of the mixture and set them in a warm

place for two days; then heat very moderately and after one hour begin to percolate, adding to the drugs after the liquid has ceased to drop Alcohol and Water mixed in the proportion of 19 fluidounces of Alcohol to 5 fluidounces of Water and continuing the heat and percolation until 14 fluidounces have passed, which reserve. Turn off the heat and continue the percolation with Alcohol and Water mixed as last directed until the drugs are exhausted. Distill off the Alcohol ( $\frac{2}{3}$  of the measure) from this last portion and evaporate the remainder to a soft extract, which dissolve in the reserved portion, and add enough of the menstruum last directed to make a pint of the Fluid Extract. Lastly, after standing a few days filter through muslin.

The Alcohol remaining in the drugs after percolation may be recovered by distillation.

### FLUID EXTRACT CINCHONA COMPOUND.

Red Cinchona Bark, in No. 50		
powder,		8½ ounces av.
Bitter Orange Peel,	“ 20	6½ “
Serpentaria.	“ 50	1½ “
Glycerin,		2 fl.ounces.
Alcohol,		
Water, each, a sufficient quantity.		

Mix the Glycerin with 12 fluidounces of Alcohol and 2 fluidounces of Water, and having moistened the powders, which have been previously mixed, with 6 ounces of the mixture, pack firmly in the water-bath percolator, pour upon them the remainder of the mixture and set in a warm place for two days; then heat very moderately, and after one hour begin to percolate, adding to the drugs after the liquid has ceased to drop Alcohol and Water mixed in the proportion of 19 fluidounces of Alcohol to 5 fluidounces of Water, and continuing the heat and percolation until 14 fluidounces have passed, which reserve. Turn off the heat and continue the percolation with Alcohol and Water mixed as last directed, until the drugs are exhausted. Distill off the Alcohol ( $\frac{2}{3}$  of the measure) from this last portion, and evaporate the remainder to a soft extract, which dissolve in the reserved portion, and add enough of the menstruum last directed to make a pint of the Fluid Extract. Lastly, after standing a few days, filter through muslin.

The Alcohol remaining in the drugs after percolation may be recovered by distillation.

To make Compound Tincture of Cinchona from this Fluid Extract take  $2\frac{3}{4}$  fluidounces of the Extract, 1 fluidounce of Glycerin, 1 fluidounce of Water and enough Alcohol to make the measure a pint.

This Fluid Extract, as well as the simple Fluid Extract of Cinchona, was formerly made only half the present strength, and many manufacturers still continue to make it in this way. The value of Fluid Extracts of Cinchona depends mainly upon the use of a good quality of bark in their manufacture, much of the bark that is sold to the retail trade being utterly worthless for that purpose. See remarks after Cinchona.

#### FLUID EXTRACT COLOCYNTH COMPOUND.

Purified Aloes, in coarse powder,	$6\frac{1}{2}$ ounces av.
Colocynth Pulp,       “       “	$6\frac{1}{2}$ “
Liquorice Root,       “       “	1       “
Resin of Scammony, in fine powder,	1       “
Cardamom,       “       “	1       “
Carbonate of Potassium,	$\frac{1}{2}$ “
Alcohol,	
Water, each, a sufficient quantity.	

Mix three measures of Alcohol with one measure of Water, and having mixed the powders, moisten them with 6 ounces of the menstruum, pack firmly in the water-bath percolator, pour upon them 10 ounces of the menstruum in which the Carbonate of Potassium has been dissolved and set in a warm place for two days; then heat very moderately and after one hour begin to percolate slowly, adding menstruum to the drugs, and continuing the heat and percolation until 14 fluidounces have passed, which reserve. Turn off the heat and continue the percolation with menstruum until the drugs are exhausted. Distill the Alcohol ( $\frac{3}{4}$  of the measure) from this last portion, evaporate the residue to a soft extract, which dissolve in the reserved portion, and add enough menstruum to make a pint of the Fluid Extract.

The Alcohol remaining in the drugs after percolation may be recovered by distillation.

Laxative or Cathartic, according to the dose.

#### FLUID EXTRACT DANDELION AND RHUBARB.

Dandelion, in No. 20 powder,	$8\frac{1}{3}$ ounces av.
Rhubarb,       “       20       “	$8\frac{1}{3}$ “
Diluted Alcohol, a sufficient quantity.	

Moisten the powders with 8 ounces of Diluted Alcohol

and macerate them for 24 hours in a close vessel; transfer them to the water-bath percolator, pack moderately, pour upon them 10 ounces of Diluted Alcohol and set in a warm place for two days; then heat very moderately and after one hour begin to percolate slowly, adding Diluted Alcohol to the drugs, and continuing the heat and percolation until 12 fluid-ounces have passed, which reserve. Turn off the heat and continue the percolation with Diluted Alcohol until the drugs are exhausted. Distill off the Alcohol ( $\frac{1}{2}$  of this last portion) by means of the water-bath and still; and evaporate the remainder by the water-bath to a soft extract, which dissolve in the portion previously reserved, and add enough Diluted Alcohol to make a pint of the Fluid Extract.

### FLUID EXTRACT DANDELION AND SENNA.

Dandelion, in No. 20 powder,	8 $\frac{1}{3}$ ounces av.
Senna, " 20 "	8 $\frac{1}{3}$ "
Diluted Alcohol, a sufficient quantity.	

Moisten the powders with 10 ounces of Diluted Alcohol and macerate them for 24 hours in a close vessel; transfer them to the water-bath percolator, pack moderately, pour upon them 10 ounces of Diluted Alcohol and set in a warm place for one day; then heat very moderately and after one hour begin to percolate slowly, adding Diluted Alcohol to the drugs and continuing the heat and percolation until 13 fluid-ounces have passed, which reserve. Turn off the heat and continue the percolation with Diluted Alcohol until the drugs are exhausted. Distill off the Alcohol ( $\frac{1}{2}$  of this last portion) by means of the water-bath and still, and evaporate the remainder by the water-bath to a soft extract, which dissolve in the portion previously reserved, and add enough Diluted Alcohol to make a pint of the Fluid Extract.

### FLUID EXTRACT DANDELION COMPOUND.

Dandelion, in No. 20 powder,	14 $\frac{2}{3}$ ounces av.
Mandrake, " 40 "	I "
Conium Leaves, 30 "	I "
Diluted Alcohol, a sufficient quantity.	

Moisten the powders with 8 ounces of Diluted Alcohol, and macerate them for 24 hours in a close vessel; transfer them to the water-bath percolator, pack moderately, pour upon them 10 ounces of Diluted Alcohol and set in a warm

place for one day ; then heat very moderately, and after one hour begin to percolate slowly, adding Diluted Alcohol to the drugs and continuing the heat and percolation until 13 fluidounces have passed, which reserve. Turn off the heat and continue the percolation with Diluted Alcohol until the drugs are exhausted. Distill off the Alcohol ( $\frac{1}{2}$  of this last portion) by means of the water-bath and still, and evaporate the remainder by the water-bath to a soft extract, which dissolve in the portion previously reserved and add enough Diluted Alcohol to make a pint of the Fluid Extract.

### FLUID EXTRACT GENTIAN COMPOUND.

Gentian, in No. 20 powder,	10 ounces av.
Bitter Orange Peel, “	4 “
Cardamom, in No. 50 “	$2\frac{2}{3}$ “
Alcohol,	
Water, each, a sufficient quantity.	

Mix Alcohol and Water in the proportion of three measures of Alcohol to two measures of Water, and, having mixed the powders, moisten them with 8 ounces of the menstruum and macerate for twenty-four hours ; transfer to the water-bath percolator, pack moderately, pour upon them 12 ounces of the menstruum and set in a warm place for two days ; then heat moderately and after one hour begin to percolate slowly, adding menstruum to the drugs and continuing the heat and percolation until 13 fluidounces have passed, which reserve. Turn off the heat and continue the percolation with menstruum until the drugs are exhausted. Distill the Alcohol ( $\frac{2}{3}$  the measure) from this last portion, evaporate the remainder to a soft extract, which dissolve in the reserved portion and add enough menstruum to make a pint of the Fluid Extract.

To make Compound Tincture of Gentian, mix 2 fluid-ounces of this Fluid Extract with enough Diluted Alcohol to make a pint.

### FLUID EXTRACT GRINDELIA COMPOUND.

Grindelia Robusta, in No. 30 powder,	$8\frac{2}{3}$ ounces av.
Jaborandi, “ 30	4 “
Cubeb, “ 40	2 “
Conium Leaves, “ 30	2 “
Alcohol, a sufficient quantity.	

Mix the powders, moisten them with 10 ounces of Alcohol,

pack firmly in the water-bath percolator, pour upon them 12 ounces of Alcohol and set in a warm place for two days; then heat very moderately, and after one hour begin to percolate, adding Alcohol to the drug and continuing the heat and percolation until 14 fluidounces have passed, which reserve. Turn off the heat and continue the percolation with Alcohol until 12 ounces have passed, or until the drugs are exhausted. Distill the Alcohol from this last portion until only 2 ounces remain, which add to the 14 ounces previously reserved to make a pint of the Fluid Extract. Lastly, after standing a few days, filter through paper. The Alcohol remaining in the drugs after percolation may be recovered by distillation.

### FLUID EXTRACT HELONIAS COMPOUND.

Helonias, in No. 40 powder,	9	ounces av.
Buchu, " 30 "	2 1/2	"
Gentian, " 30 "	2 1/2	"
Golden Seal, " 40 "	2 1/2	"
Alcohol,		
Water, each, a sufficient quantity.		

Mix Alcohol and Water in the proportion of 19 fluidounces of Alcohol to 8 fluidounces of Water, and having moistened the mixed powders with 8 ounces of the mixture, macerate for 24 hours in a close vessel; transfer to the water-bath percolator, pack firmly, pour upon them 10 ounces of the menstruum and set in a warm place for two days; then heat moderately and after one hour begin to percolate slowly, adding menstruum to the drugs, and continuing the heat and percolation until 14 ounces have passed, which reserve. Turn off the heat and continue the percolation with the menstruum until 12 ounces more have passed, or until the drugs are exhausted. Distill the Alcohol ( $\frac{2}{3}$  of the measure) from this last portion, and evaporate the remainder to a soft extract by means of a water-bath, dissolve this in the portion previously reserved and add enough menstruum to make a pint of the Fluid Extract.

The Alcohol remaining in the drug after percolation may be recovered by distillation.



## FLUID EXTRACT HOARHOUND COMPOUND.

Hoarhound,	in No. 20 powder		2 $\frac{1}{3}$ ounces av.	
Red Root (Jersey Tea),	“	40	“	2 $\frac{1}{3}$ “
Elecampane	“	40	“	2 $\frac{1}{3}$ “
Spikenard	“	20	“	2 $\frac{1}{3}$ “
Comfrey	“	20	“	2 $\frac{1}{3}$ “
Wild Cherry	“	20	“	2 $\frac{1}{3}$ “
Blood Root	“	40	“	2 $\frac{1}{3}$ “
Alcohol,				
Water, each, a sufficient quantity.				

Mix three measures of Alcohol with two measures of Water, and, having mixed the powders, moisten them with 10 ounces of the mixture and macerate for twenty-four hours in a warm place; transfer to the water-bath percolator, pack moderately, pour upon them 10 ounces of the menstruum and set in a warm place for one day; then heat very moderately and after one hour begin to percolate, adding menstruum to the drugs and continuing the heat and percolation until the drugs are exhausted. Reserve the first 13 fluidounces and evaporate the remainder by distillation to a soft extract, which dissolve in the reserved portion and add enough menstruum to make a pint of the fluid extract.

To make Pulmonary Syrup, or Compound Syrup of Hoarhound, mix 3 fluidounces of the Fluid Extract with 6 ounces of water, filter, and dissolve in the filtrate 14 ounces av. of granulated sugar.

## FLUID EXTRACT IPECAC AND SENEGA.

Ipecac, in No. 50 powder,	8 $\frac{1}{3}$ ounces av.
Senega, “ 50 “	8 $\frac{1}{3}$ “
Diluted Alcohol, a sufficient quantity.	

Moisten the powders with 8 ounces of Diluted Alcohol and macerate them for 24 hours in a close vessel, transfer them to the water-bath percolator, pack firmly, pour upon them 10 ounces of Diluted Alcohol and set in a warm place for two days; then heat very moderately and after one hour begin to percolate slowly, adding Diluted Alcohol to the drugs and continuing the heat and percolation until 14 fluidounces have passed, which reserve. Turn off the heat and continue the percolation with Diluted Alcohol until the drugs are exhausted. Distill off the Alcohol ( $\frac{1}{2}$  of this last portion) by means of the water-bath and still, and evaporate

the remainder by the water-bath to a soft extract, which dissolve in the portion previously reserved and add enough Diluted Alcohol to make a pint of the Fluid Extract. Lastly, after standing a few days filter through muslin.

### FLUID EXTRACT JALAP AND RHUBARB.

Jalap, in No. 40 powder,	8 $\frac{1}{3}$ ounces av.
Rhubarb, " 20 "	8 $\frac{1}{3}$ "
Carbonate of Potassium,	$\frac{1}{2}$ "
Alcohol,	
Water, each, a sufficient quantity.	

Mix three measures of Alcohol with one measure of Water, and having mixed the powders, moisten them with 6 ounces of the menstruum, pack firmly in the water-bath percolater, pour upon them 10 ounces of menstruum in which the Carbonate of Potassium is dissolved and set in a warm place for two days; then heat very moderately and after one hour begin to percolate slowly, adding menstruum to the drugs and continuing the heat and percolation until 14 fluidounces have passed, which reserve. Turn off the heat and continue the percolation with menstruum until the drugs are exhausted. Distill the Alcohol ( $\frac{3}{4}$  of the measure) from this last portion, evaporate the residue to a soft extract, which dissolve in the reserved portion and add enough menstruum to make a pint of the Fluid Extract.

The Alcohol remaining in the drugs after percolation may be recovered by distillation.

### FLUID EXTRACT JALAP AND SENNA.

Jalap, in No. 40 powder,	8 $\frac{1}{3}$ ounces av.
Senna, " 30 "	8 $\frac{1}{3}$ "
Alcohol,	
Water, each, a sufficient quantity.	

Mix Alcohol and Water in the proportion of 19 fluidounces of Alcohol to 8 fluidounces of Water, and having moistened the mixed powders with 10 ounces of the mixture, macerate for 24 hours in a close vessel; transfer to the water-bath percolator, pack firmly, pour upon them 12 ounces of the menstruum and set in a warm place for one day; then heat moderately and after one hour begin to percolate slowly, adding menstruum to the drugs and continuing the heat and percolation until 13 ounces have passed, which reserve. Turn off the heat and con-

tinue the percolation with the menstruum until 12 ounces more have passed, or until the drugs are exhausted. Distill the Alcohol ( $\frac{2}{3}$  of the measure) from this last portion and evaporate the remainder to a soft extract by means of a water-bath; dissolve this in the portion previously reserved, and add enough menstruum to make a pint of the Fluid Extract.

The Alcohol remaining in the drugs after percolation may be recovered by distillation.

## FLUID EXTRACT OF LIQUORICE COMPOUND.

### *For Quinine Mixtures.*

Liquorice Root, in No. 30 powder,	7 ounces av.
Wild Cherry, " 30 "	6 "
Anise, " 40 "	1 "
Coriander, " 40 "	1 "
Caraway, " 40 "	1 "
Alcohol,	3 fl. ounces.

Water, a sufficient quantity.

Mix the drugs, moisten them with 12 ounces of Water and macerate for 24 hours in a warm place, then transfer to the water-bath percolator, pack moderately, pour upon them a pint of water and set in a warm place for one day; then heat very moderately, and after one hour begin to percolate, adding Water to the drugs and continuing the heat and percolation until 10 fluidounces have passed, which reserve. Continue the heat and percolation with Water, until the drugs are exhausted. Evaporate this percolate to the consistence of a soft extract, which dissolve in the reserved portion, and add the Alcohol and enough Water if necessary to make a pint of the Fluid Extract. After standing, filter through muslin.

This may be reduced with Simple Elixir or Syrup, or used as it is as a vehicle for quinine and other disagreeable medicines. The usual strength for the Elixir or Syrup of Liquorice Compound is 2 fluidounces of the Fluid Extract mixed with 14 fluidounces of Elixir or Syrup.

## FLUID EXTRACT LOBELIA COMPOUND.

Lobelia Herb, in No. 30 powder,	5 $\frac{1}{2}$ ounces av.
Bloodroot, " 40 "	5 $\frac{1}{2}$ "
Skunk Cabbage, " 40 "	5 $\frac{1}{2}$ "
Alcohol,	

Water, each, a sufficient quantity.

Mix Alcohol and Water in the proportion of 19 fluid-

ounces of Alcohol to 8 fluidounces of Water, and having moistened the mixed powders with 8 ounces of the mixture, macerate for 24 hours in a close vessel; transfer to the water-bath percolator, pack firmly, pour upon them 10 ounces of the menstruum and set in a warm place for two days; then heat moderately and after one hour begin to percolate slowly, adding menstruum to the drugs and continuing the heat and percolation until 14 ounces have passed, which reserve. Turn off the heat and continue the percolation with the menstruum until 12 ounces more have passed, or until the drugs are exhausted. Distill the Alcohol ( $\frac{2}{3}$  of the measure) from this last portion, and evaporate the remainder to a soft extract by means of a water-bath; dissolve this in the portion previously reserved and add enough menstruum to make a pint of the Fluid Extract.

The Alcohol remaining in the drugs after percolation may be recovered by distillation.

#### FLUID EXTRACT OF MANDRAKE COMPOUND.

Mandrake, in No. 50 powder,	5 ounces av.
Leptandra,       “   40   “	5   “
Senna,           “   30   “	5   “
Canella,         “   40   “	1 $\frac{2}{3}$ “
Alcohol,	
Water, each, a sufficient quantity.	

Mix Alcohol and Water in the proportion of 19 fluidounces of Alcohol to 8 fluidounces of Water, and having moistened the mixed powders with 10 ounces of the mixture, macerate for 24 hours in a close vessel; transfer to the water-bath percolator, pack firmly, pour upon them 10 ounces of the menstruum and set in a warm place for two days; then heat moderately, and after one hour begin to percolate slowly, adding menstruum to the drugs and continuing the heat and percolation until 13 ounces have passed, which reserve. Turn off the heat and continue the percolation with menstruum until 12 ounces more have passed, or until the drugs are exhausted. Distill the Alcohol ( $\frac{2}{3}$  of the measure) from this last portion, and evaporate the remainder to a soft extract by means of a water-bath; dissolve this in the portion previously reserved and add enough menstruum to make a pint of the Fluid Extract.

The Alcohol remaining in the drugs after percolation may be recovered by distillation.

## FLUID EXTRACT OF MATICO COMPOUND.

Matico, in No. 40 powder,	5½ ounces av.
Buchu, “	5½ “
Cubeb, “	5½ “
Alcohol, a sufficient quantity.	

Mix the powders, moisten them with 10 ounces of Alcohol, pack firmly in the water-bath percolator, pour upon them 12 ounces of Alcohol and set in a warm place for two days; then heat very moderately and after one hour begin to percolate, adding Alcohol to the drugs and continuing the heat and percolation until 14 fluidounces have passed, which reserve. Turn off the heat and continue the percolation with Alcohol until 12 ounces have passed or until the drugs are exhausted. Distill the Alcohol from this last portion until only 2 ounces remain, which add to the 14 ounces previously reserved to make a pint of the Fluid Extract. Lastly, after standing a few days filter through paper.

The Alcohol remaining in the drugs after percolation may be recovered by distillation.

## FLUID EXTRACT MITCHELLA COMPOUND.

*Fluid Extract Squaw Vine Compound,—Fluid Extract Partridgeberry Vine Compound.*

Squaw Vine, in No. 40 powder,	9½ ounces av.
Helonias Root, “ 40 “	2½ “
Blue Cohosh, “ 40 “	2½ “
Cramp Bark, “ 40 “	2 “
Alcohol,	

Water, each, a sufficient quantity.

Mix Alcohol and Water in the proportion of 19 fluid-ounces of Alcohol to 8 fluidounces of Water, and having moistened the mixed powders with 10 ounces of the mixture, macerate for 24 hours in a close vessel; transfer to the water-bath percolator, pack firmly, pour upon them 12 ounces of the menstruum and set in a warm place for one day; then heat moderately and after one hour begin to percolate slowly adding menstruum to the drugs and continuing the heat and percolation until 13 ounces have passed, which reserve. Turn off the heat and continue the percolation with the menstruum until 12 ounces more have passed or until the drugs are exhausted. Distill the Alcohol ( $\frac{2}{3}$  of the measure) from

this last portion and evaporate the remainder to a soft extract by means of a water-bath; dissolve this in the portion previously reserved and add enough menstruum to make a pint of the Fluid Extract.

The Alcohol remaining in the drugs after percolation may be recovered by distillation.

To make Compound Syrup of *Mitchella* (also called Mother's Cordial), mix  $3\frac{1}{2}$  fluidounces of this Fluid Extract with 6 ounces of Water and filter; then dissolve in the filtrate 14 ounces av. of Granulated Sugar.

### FLUID EXTRACT OF PINK ROOT AND SENNA.

Pink Root, in No. 40 powder	9 $\frac{1}{3}$ ounces av.
Senna, " 30 "	5 $\frac{1}{3}$ "
Caraway, " 50 "	1 "
Anise, " 50 "	1 "
Diluted Alcohol, a sufficient quantity.	

Moisten the powders with 10 ounces of Diluted Alcohol and macerate them for 24 hours in a close vessel; transfer them to the water-bath percolator, pack firmly, pour upon them 10 ounces of Diluted Alcohol and set in a warm place for two days; then heat moderately and after one hour begin to percolate slowly, adding Diluted Alcohol to the drugs and continuing the heat and percolation until 13 fluidounces have passed, which reserve. Turn off the heat and continue the percolation with Diluted Alcohol until the drugs are exhausted. Distill off the Alcohol ( $\frac{1}{2}$  of this last portion) by means of the water-bath and still, and evaporate the remainder by the water-bath to a soft extract, which dissolve in the portion previously reserved and add enough Diluted Alcohol to make a pint of the Fluid Extract.

### FLUID EXTRACT OF POKE ROOT COMPOUND.

Poke Root, in No. 40 powder,	6 $\frac{1}{3}$ ounces av.
Black Cohosh, " 40 "	6 $\frac{1}{3}$ "
Prickly Ash Berries, in No. 30 powder,	2 ounces av.
Juniper Berries, " 30 "	2 "
Alcohol, a sufficient quantity.	

Mix the powders, moisten them with 6 ounces of Alcohol, pack firmly in the water-bath percolator, pour upon them 10 ounces of Alcohol and set in a warm place for two days; then heat very moderately and after one hour begin to percolate, adding Alcohol to the drugs and continuing the heat

and percolation until 14 fluidounces have passed, which reserve. Turn off the heat and continue the percolation with Alcohol until 12 ounces have passed or until the drugs are exhausted. Distill the Alcohol from this last portion until only 2 ounces remain; which add to the 14 ounces previously reserved to make a pint of the Fluid Extract. Lastly, after standing a few days filter through muslin. The Alcohol remaining in the drugs after percolation may be recovered by distillation.

To make Compound Syrup of Phytolacca, mix 3 fluidounces of this Fluid Extract with 6 ounces of Water, filter and dissolve 14 ounces av. of Sugar in the filtrate.

This is considered a good Alterative Anti-rheumatic Syrup.

#### FLUID EXTRACT RHUBARB AND SENNA.

Rhubarb, in No. 20 powder,	10	ounces av.
Senna, " 20 "	3	"
Coriander, " 50 "	1 $\frac{1}{4}$	"
Fennel, " 50 "	1 $\frac{1}{4}$	"
Liquorice, " 30 "	1	"
Alcohol,		
Water, each, a sufficient quantity.		

Mix Alcohol and Water in the proportion of 19 fluidounces of Alcohol to 8 fluidounces of Water, and having moistened the mixed powders with 10 ounces of the mixture, macerate for twenty-four hours in a close vessel; transfer to the water-bath percolator, pack firmly, pour upon them 10 ounces of the menstruum and set in a warm place for one day, then heat very moderately, and after one hour begin to percolate slowly, adding menstruum to the drugs and continuing the heat and percolation until 12 ounces have passed, which reserve. Turn off the heat and continue the percolation with the menstruum until 12 ounces more have passed or until the drugs are exhausted. Distill the Alcohol ( $\frac{2}{3}$  of the measure) from this last portion and evaporate the remainder to a soft extract by means of a water-bath; dissolve this in the portion previously reserved and add enough menstruum to make a pint of the Fluid Extract. The Alcohol remaining in the drugs after percolation may be recovered by distillation.



## AROMATIC FLUID EXTRACT RHUBARB.

Rhubarb, in No. 20 powder,	10½ ounces av.
Cloves, “ 50 “	2 “
Cinnamon, “ 50 “	2 “
Nutmeg, “ 50 “	1 “
Carbonate of Potassium,	½ “
Alcohol,	
Water, each, a sufficient quantity.	

Mix three measures of Alcohol with one measure of Water, and having mixed the powders, moisten them with 8 ounces of the menstruum, in which the Carbonate of Potassium has been dissolved, and macerate for twenty-four hours in a covered vessel in a warm place; transfer the drugs to the water-bath percolator, pack firmly, pour upon them 12 ounces of the menstruum and set in a warm place for two days; then heat very moderately, and after one hour begin to percolate, adding menstruum to the drugs and continuing the heat and percolation until 12 fluidounces have passed, which reserve. Turn off the heat and continue the percolation with the menstruum until the drugs are exhausted. Distill the Alcohol ( $\frac{3}{4}$  of the measure) from this last portion and evaporate the remainder to a soft extract, which dissolve in the reserved portion and add enough menstruum to make a pint of the Fluid Extract. After standing a few days filter through muslin.

The Alcohol remaining in the drugs after percolation may be recovered by distillation.

To make Aromatic Tincture of Rhubarb mix  $3\frac{1}{3}$  fluidounces of this Fluid Extract with enough Diluted Alcohol to make a pint.

To make Aromatic Syrup of Rhubarb mix half an ounce with a pint of Syrup.

## FLUID EXTRACT OF RUMEX, COMPOUND.

*Compound Fluid Extract of Yellow Dock.*

Yellow Dock Root, in No. 20 powder,	8⅓ ounces av.
False Bitter Sweet Bark, “ 30	4⅓ “
American Ivy Bark, “ 30	2 “
Figwort, “ 20	2 “
Diluted Alcohol, a sufficient quantity.	

Mix the powders, moisten them with 10 ounces of Diluted

Alcohol and macerate in a close vessel for 24 hours, transfer to the water-bath percolator, pack moderately, pour upon them 10 ounces of Diluted Alcohol and set in a warm place for one day; then heat very moderately, and after one hour begin to percolate, adding Diluted Alcohol, and continuing the heat and percolation until the drugs are exhausted. Reserve the first 13 fluidounces, evaporate the Alcohol from the remainder by distillation, and then to a soft extract, which mix with the reserved portion, and add enough Diluted Alcohol to make a pint of the Fluid Extract.

To make the Eclectic, "*Scrofulous Syrup*," mix 4 fluidounces of this Fluid Extract with 5 ounces of Water, filter and dissolve in the filtrate 14 ounces av. of granulated sugar. This is a well known antiscorbutic and blood-purifier.

#### FLUID EXTRACT SARSAPARILLA AND DANDELION.

Sarsaparilla, in No.	30 powder,	8 $\frac{1}{3}$ ounces av.
Dandelion,	" 30 "	8 $\frac{1}{3}$ "
Diluted Alcohol, a sufficient quantity.		

Moisten the powders with 8 ounces of Diluted Alcohol and macerate them for twenty-four hours in a close vessel, transfer them to the water-bath percolator, pack firmly, pour upon them 10 ounces of Diluted Alcohol and set in a warm place for two days; then heat moderately and after one hour begin to percolate slowly, adding Diluted Alcohol to the drugs and continuing the heat and percolation until 13 fluidounces have passed, which reserve. Turn off the heat and continue the percolation with Diluted Alcohol until the drugs are exhausted. Distill off the Alcohol ( $\frac{1}{2}$  of this last portion) by means of water-bath and still, and evaporate the remainder by the water-bath to a soft extract, which dissolve in the portion previously reserved, and add enough Diluted Alcohol to make a pint of the Fluid Extract.

Alterative and Laxative.

#### FLUID EXTRACT SARSAPARILLA COMPOUND, U. S.

*Extractum Sarsaparillæ Compositum Fluidum.*

This Fluid Extract is officinal. (See officinal Fluid Extracts.)

## FLUID EXTRACT SCULLCAP COMPOUND.

Scullcap,	in No. 20 powder,	6 $\frac{2}{3}$ ounces av.
Cypripedium,	" 40 "	4 "
Hops,	" 20 "	3 "
Lettuce, Wild,	" 20 "	3 "
Alcohol,		
Water, each,	a sufficient quantity.	

Mix Alcohol and Water in the proportion of 19 fluid-ounces of Alcohol to 8 fluidounces of Water, and having moistened the mixed powders with 10 ounces of the mixture, macerate for twenty-four hours in a close vessel; transfer to the water-bath percolator, pack firmly, pour upon them 10 ounces of the menstruum and set in a warm place for two days, then heat moderately and after one hour begin to percolate slowly, adding menstruum to the drugs and continuing the heat and percolation until 14 ounces have passed, which reserve. Turn off the heat and continue the percolation with the menstruum until 12 ounces more have passed or until the drugs are exhausted. Distill the Alcohol ( $\frac{2}{3}$  of the measure) from this last portion and evaporate the remainder to a soft extract by means of a water-bath; dissolve this in the portion previously reserved and add enough menstruum to make a pint of the Fluid Extract. The Alcohol remaining in the drug after percolation may be recovered by distillation. This is a good tonic nervine.

## FLUID EXTRACT SENNA COMPOUND.

Senna,	in No. 30 powder,	8 $\frac{2}{3}$ ounces av.
Rhubarb,	" 20 "	4 "
Jalap,	" 50 "	2 "
Mandrake,	" 50 "	2 "
Alcohol,		
Water, each,	a sufficient quantity.	

Mix Alcohol and Water in the proportion of 19 fluid-ounces of Alcohol to 8 fluidounces of Water, and having moistened the mixed powders with 10 ounces of the mixture, macerate them for twenty-four hours in a close vessel; transfer to the water-bath percolator, pack firmly, pour upon them 10 ounces of the menstruum and set in a warm place for two days; then heat moderately and after one hour begin to percolate slowly, adding menstruum to the drugs, and continuing the heat and percolation until 13 ounces have passed, which reserve. Turn off the heat and continue the

percolation with the menstruum until 12 ounces more have passed or until the drugs are exhausted. Distill the Alcohol ( $\frac{2}{3}$  of the measure) from this last portion, and evaporate the remainder to a soft extract by means of a water-bath; dissolve this in the portion previously reserved and add enough menstruum to make a pint of the Fluid Extract. The Alcohol remaining in the drugs after percolation may be recovered by distillation.

Laxative or Cathartic, according to the dose.

### FLUID EXTRACT SPIKENARD COMPOUND.

*Compound Fluid Extract of Aralia.*

Spikenard Root, in No. 20 powder,		2 $\frac{1}{2}$ ounces av.
Yellow Dock Root, “ 20		2 $\frac{1}{2}$ “
Burdock Root, “ 20		2 $\frac{1}{2}$ “
Quaiac Wood, “ 30		2 $\frac{1}{2}$ “
Sassafras Bark, “ 20		2 $\frac{1}{2}$ “
Southern Prickly Ash “ 40		2 “
Elder Flowers, “ 30		2 “
Blue Flag Root, “ 30		2 “
Diluted Alcohol, a sufficient quantity.		

Mix the powders, moisten them with 12 ounces of Diluted Alcohol, and macerate in a warm place for 24 hours; transfer to the water-bath percolator, pack moderately, pour upon them 12 ounces of Diluted Alcohol, and set in a warm place for one day; then heat moderately, and after one hour begin to percolate, adding Diluted Alcohol to the drugs and continuing the heat and percolation until the drugs are exhausted. Reserve the first 13 fluidounces that pass, distill the Alcohol from the remainder and evaporate the residue to a soft extract, which dissolve in the reserved portion, and add enough Diluted Alcohol to make a pint of the Fluid Extract.

To make the Eclectic, Alterative Syrup or Compound Syrup of Aralia, mix 4 fluidounces of this Fluid Extract with 5 ounces of Water. Filter and dissolve in the filtrate 14 ounces av. of Granulated Sugar.

### FLUID EXTRACT SQUILL COMPOUND.

Squill, in No. 20 powder,	8 $\frac{1}{3}$ ounces av.
Seneka, “ 40 “	8 $\frac{1}{3}$ “
Water of Ammonia,	$\frac{1}{2}$ fl.ounce.
Alcohol,	
Water, each, a sufficient quantity.	

Mix Alcohol and Water in the proportion of 19 fluid-

ounces of Alcohol to 8 fluidounces of Water, and having moistened the mixed powders with 8 ounces of the mixture, macerate for twenty-four hours in a close vessel; transfer to the water-bath percolator, pack firmly, pour upon them 10 ounces of the menstruum and set in a warm place for two days; then heat very moderately and after one hour begin to percolate slowly, adding menstruum to the drugs and continuing the heat and percolation until 14 ounces have passed, which reserve. Turn off the heat and continue the percolation with the menstruum until 12 ounces more have passed or until the drugs are exhausted. Distill the Alcohol ( $\frac{2}{3}$  of the measure) from this last portion, and evaporate the remainder to a soft extract by means of a water-bath; dissolve this in the portion previously reserved, add the Water of Ammonia and enough menstruum to make a pint of the Fluid Extract. Lastly, after standing a few days, filter through muslin. The Alcohol remaining in the drugs after percolation may be recovered by distillation.

To make Compound Syrup of Squill from this Fluid Extract, dissolve 15 grains Tartrate of Antimony and Potassium in half an ounce of Boiling Water; while warm mix with  $1\frac{1}{4}$  fluidounces of the Fluid Extract and add enough Syrup to make a pint.

#### FLUID EXTRACT STILLINGIA COMPOUND.

Stillingia,	in No. 30 powder,	4 ounces av.
Turkey Corn,	“ 40 “	4 “
Elder Flowers,	“ 30 “	2 “
Blue Flag,	“ 30 “	2 “
Pipsissewa.	“ 30 “	2 “
Coriander Seed,	“ 40 “	1 “
Prickly Ash Bark,	“ 40 “	1 “
Alcohol,		
Water, each,	a sufficient quantity.	

Mix Alcohol and Water in the proportion of 19 fluidounces of Alcohol to 8 fluidounces of Water, and having moistened the mixed powders with 8 ounces of the mixture, macerate for twenty-four hours in a close vessel; transfer to the water-bath percolator, pack firmly, pour upon them 10 ounces of the menstruum and set in a warm place for two days; then heat moderately and after one hour begin to percolate slowly, adding menstruum to the drugs and continuing the heat and percolation until 14 ounces have passed, which reserve. Turn off the heat and continue the percolation with the menstruum until 12 ounces more have passed

or until the drugs are exhausted. Distill the Alcohol ( $\frac{2}{3}$  of the measure) from this last portion, and evaporate the remainder to a soft extract, by means of a water-bath; dissolve this in the portion previously reserved and add enough menstruum to make a pint of the Fluid Extract. The Alcohol remaining in the drugs after percolation may be recovered by distillation.

To make Compound Syrup of *Stillingia* from this Fluid Extract, mix 4 fluidounces with 5 fluidounces of Water, and after standing a few hours, filter, then dissolve 14 ounces av. of Granulated Sugar in the filtrate by agitation.

This is one of the best known Alterative Syrups.

### FLUID EXTRACT WILD CHERRY COMPOUND.

Wild Cherry,	in No. 20 powder,	$8\frac{2}{3}$ ounces av.
Hoarhound,	“ 20	3 “
Lettuce, Wild,	“ 20	3 “
American Hellebore,	40	1 “
Bloodroot,	40	1 “
Alcohol,		

Water, each, a sufficient quantity.

Moisten the Wild Cherry with 6 ounces of Water and macerate in a warm place for twenty-four hours. Mix it then with the other powders, and, having mixed two measures of Alcohol with one measure of Water, moisten the drugs with 6 ounces of the menstruum, and pack firmly in the water-bath percolator; pour upon them 8 ounces of the menstruum and set in a warm place for two days; then heat very moderately and after one hour begin to percolate, adding menstruum to the drugs and continuing the heat and percolation until 14 fluidounces have passed, which reserve. Turn off the heat and continue the percolation with the menstruum until the drugs are exhausted. Distill the Alcohol from this last portion and evaporate the residue to a soft extract, which dissolve in the reserved portion, and add enough menstruum to make a pint of the Fluid Extract. Lastly, after standing a few days, filter through muslin.

The Alcohol remaining in the drugs after percolation may be recovered by distillation.

This is a valuable sedative expectorant. It may be made into a syrup by mixing 2 fluidounces with 7 ounces of Water, filtering and dissolving in the filtrate 14 ounces av. of Granulated Sugar.

## OTHER COMPOUND FLUID EXTRACTS.

The foregoing formulæ for Compound Fluid Extracts represent nearly all that are at present quoted by manufacturers, but other combinations will, no doubt, be added, and it is only necessary for the intelligent druggist to follow the data here given to prepare any Compound Fluid Extract that may be desired.

## ETHERIAL FLUID EXTRACTS.

Among the first Fluid Extracts that were officinal in the U. S. were a number of preparations made with ether as a menstruum that are now classed as oleoresins. Manufacturers have furnished several Etherial Fluid Extracts which have had more or less reputation, but none are now officinal and they are rapidly going out of use, mainly because ether is an unstable and disagreeable vehicle for the exhibition of medicine. As Etherial Fluid Extracts may, however, be required, we give the following :

## GENERAL FORMULA FOR ETHERIAL FLUID EXTRACTS.

To complete the formula for any Fluid Extract in this class put the name of the drug and the fineness of powder required, in the following formula :

The Drug, in No. — powder,       $16\frac{2}{3}$  ounces av.  
Ether,  
Alcohol, each, a sufficient quantity.

Moisten the powder with from 6 to 8 fluidounces of the Ether and pack quickly and firmly in the water-bath percolator, pour upon it sufficient Ether to saturate and barely cover the drug, and having covered closely, set in a warm place for two days; then pour hot water in the water-bath surrounding the percolator and after one hour begin to percolate adding Alcohol to the drug and continuing the percolation until the drug is exhausted. Reserve the first 14 fluidounces that pass, evaporate the remainder by distillation to 2 fluidounces and add to the reserved portion.

The Alcohol remaining in the drug may be recovered by distillation.

The following drugs are those from which Etherial Fluid



Extracts are usually prepared. They may be made from any other drugs which contain Oleoresins or principles best soluble in Ether.

Latin Name.	Common Name.	Part Used.	Powder No.
Cantharis, . .	Cantharides, . . .	whole fly, . . .	60
Cubeba, . .	Cubeb, . . .	fruit, . . .	60
Digitalis, . .	Digitalis or Foxglove, . . .	leaves, . . .	60
Ergota, . . .	Ergot, . . .	fungus, . . .	60

## FLUID EXTRACTS OF GUMS, RESINS, ETC.

### *Liquid Extracts.*

This class of preparations (which are not in fact Fluid Extracts as the term is generally applied, but which might much more properly be called Liquid Extracts) seem superfluous, and would not here be given but for the reason that they are quoted and supplied by many manufacturers and will therefore be demanded by many druggists.

They are seldom used except to prepare tinctures or other preparations which would be much better made from the substances themselves. They generally represent about 50 per cent. of the drug from which they are prepared, although, it cannot be said for all of them that they represent as much as is claimed for them.

## FLUID EXTRACT OF ALOES.

### *Liquid Extract of Aloes.*

Socotrine Aloes, in No. 50 powder,  $8\frac{1}{3}$  ounces av.

Diluted Alcohol, a sufficient quantity.

Mix the Aloes with 10 fluidounces of Diluted Alcohol and heat moderately in a tightly-stopped, wide-mouth bottle on a water-bath, for three hours; then strain through muslin and add enough Diluted Alcohol through the strainer to make a pint of the Fluid Extract.

To make the 1870 Tincture of Aloes, mix 1 fluidounce of this Extract with 3 fluidounces of Fluid Extract of Liquorice Extract, and add Alcohol  $1\frac{1}{2}$  ounces and enough Water to make a pint.

To make the 1880 tincture, mix 3 fluidounces, each, of the Fluid Extract of Aloes and the Fluid Extract of Liquorice Extract, with 10 fluidounces of Diluted Alcohol.

## FLUID EXTRACT ALOES AND MYRRH.

*Liquid Extract of Aloes and Myrrh.*

Socotrine Aloes, in No. 50 powder,      4 ounces av.  
Myrrh, in No. 50 powder,                4 ounces av.  
Alcohol, a sufficient quantity.

Mix the powders with 12 fluidounces of Alcohol and macerate them for seven days in a warm place, then heat moderately on a water-bath for two hours and strain through muslin, adding through the strainer enough Alcohol to make a pint of the Fluid Extract.

To make Tincture of Aloes and Myrrh, mix 6 fluidounces of this Extract with 10 fluidounces of Alcohol.

## FLUID EXTRACT ASAFETIDA.

*Liquid Extract of Asafetida.*

Asafetida, in coarse powder,            8½ ounces av.  
Alcohol, a sufficient quantity.

Mix the Asafetida with an equal bulk of rice chaff and pack moderately in the water-bath percolator; pour upon it sufficient Alcohol to saturate and cover the drugs, and set in a warm place for 7 days; then heat very moderately and after one hour begin to percolate, adding Alcohol to the drug and continuing the heat and percolation until a pint of the Fluid Extract has passed. This preparation seems entirely unnecessary, and would not be given here, except that several manufacturers quote such a Fluid Extract for making Tincture of Asafetida.

To make the Tincture of the 1870 Pharmacopœia mix 4¾ fluidounces of this Fluid Extract with 12 fluidounces of Alcohol; to make the 1880 Tincture mix 5½ fluidounces with 11 fluidounces of Alcohol.

## FLUID EXTRACT BENZOIN.

*Liquid Extract of Benzoïn.*

Benzoïn, in No. 50 powder,            8½ ounces av.  
Alcohol, a sufficient quantity.

Mix the powder with a pint of Alcohol and macerate in a warm place for 3 days, then, having covered the perforated

diaphragm of the water-bath percolator with a piece of coarse muslin or burlap, pour the mixture upon it, heat moderately for two hours; then begin to percolate slowly, adding Alcohol to the drug after the percolate has ceased to drop, and continuing the heat and percolation until a pint of the Fluid Extract is obtained.

To make Tincture of Benzoin mix 6 fluidounces of this Fluid Extract with 10 fluidounces of Alcohol.

## FLUID EXTRACT BENZOIN COMPOUND.

### *Liquid Extract of Benzoin Compound.*

Benzoin, in No. 50 powder,	6½ ounces av.
Purified Aloes, “ 50 “	1 “
Storax,	4½ “
Balsam Tolu,	2¼ “
Alcohol, a sufficient quantity.	

Mix the gums with a pint of Alcohol and macerate in a warm place for 3 days, then, having covered the perforated diaphragm of the water-bath percolator with a piece of coarse muslin or burlap, pour the mixture upon it, heat moderately for two hours; then begin to percolate, adding Alcohol to the drugs when the percolate has ceased to drop, and continuing the heat and percolation until a pint of the Fluid Extract is obtained.

To make Compound Tincture of Benzoin mix 4 fluidounces of this Fluid Extract with 12 fluidounces of Alcohol.

## FLUID EXTRACT OF CATECHU.

### *Liquid Extract of Catechu.*

Catechu, in coarse powder,	8⅓ ounces av.
Alcohol,	4 fl.ounces.
Water, a sufficient quantity.	

Mix the Catechu with a pint of Water, and heat it on a water-bath until the Catechu is dissolved; strain through coarse muslin and evaporate the liquid to 12 fluidounces; when cool add the Alcohol, strain through muslin and add enough Water through the strainer to make a pint of the Fluid Extract.

To make Tincture of Catechu of the 1870 Pharmacopœia, mix ¾ fluidounces of this Extract with 2 fluidounces of

Fluid Extract of Cinnamon and enough Diluted Alcohol to make a pint.

To make the Compound Tincture of Catechu of the 1880 Pharmacopœia mix  $3\frac{3}{4}$  fluidounces of this Extract with  $2\frac{1}{2}$  fluidounces of Fluid Extract of Cinnamon and enough Diluted Alcohol to make a pint.

## FLUID EXTRACT OF GUAIAIC.

### *Liquid Extract of Guaiac.*

Guaiac Resin, in coarse powder,       $8\frac{1}{3}$  ounces av.  
Alcohol, a sufficient quantity.

Mix the Guaiac with 12 fluidounces of Alcohol in a wide mouth bottle, and heat moderately on a water-bath for 3 hours, then strain through muslin; add enough Alcohol through the strainer to make a pint of the Fluid Extract.

To make the 1870 Tincture of Guaiac, mix  $6\frac{1}{2}$  fluidounces of this Extract with  $9\frac{1}{2}$  fluidounces of Alcohol.

To make the 1880 Tincture mix  $5\frac{1}{2}$  fluidounces with  $10\frac{1}{2}$  fluidounces of Alcohol.

## FLUID EXTRACT KINO.

### *Liquid Extract of Kino.*

Kino in No. 40 powder,      6 ounces av.  
Glycerin,      4 fl.ounces.  
Alcohol, a sufficient quantity.

Mix the Glycerin with 8 fluidounces of Alcohol and, having mixed the Kino with the liquid in a wide mouth bottle, stop tightly, and heat gently on a water-bath until the Kino is dissolved, then strain through muslin and add through the strainer enough Alcohol to make the measure a pint.

Two fluidounces of this Extract mixed with 11 fluidounces of Alcohol and 3 fluidounces of Water makes the official tincture.

## FLUID EXTRACT LIQUORICE EXTRACT.

### *Liquid Extract of Liquorice.*

Extract Liquorice, in No. 50  
powder,      8 ounces av.  
Alcohol,      4 fl.ounces.  
Water, a sufficient quantity.

Mix the Liquorice with a pint of Water and heat it on a

water-bath until the Liquorice is dissolved; strain through muslin and evaporate to 12 fluidounces; when cool add the Alcohol; strain through muslin, and add through the strainer enough Water to make a pint of the Fluid Extract.

## FLUID EXTRACT MYRRH.

### *Liquid Extract of Myrrh.*

Myrrh, in moderately fine powders,  $8\frac{1}{3}$  ounces av.  
Alcohol, a sufficient quantity.

Mix the Myrrh with an equal bulk of rice chaff, pack it moderately in the water-bath percolator, pour upon it a pint of Alcohol and set in a warm place for seven days; then heat very moderately and after one hour begin to percolate slowly, adding Alcohol to the drug and continuing the heat and percolation until 14 fluidounces have passed, which reserve. Turn off the heat and continue the percolation with Alcohol until the drug is exhausted. Distill the Alcohol from this last portion until only two ounces remain, which add to the reserved portion to make a pint of Fluid Extract. To make Tincture of Myrrh, U. S., 1870, mix  $3\frac{1}{4}$  fluidounces of this Fluid Extract, with enough Alcohol to make a pint. To make the 1880 officinal Tincture of Myrrh mix  $5\frac{1}{2}$  fluidounces of this Fluid Extract with enough Alcohol to make a pint.

## FLUID EXTRACT OPIUM.

### *Liquid Extract of Opium.*

Opium, in coarse powder,	4 ounces av.
Alcohol,	8 fl.ounces.
Water,	8 fl.ounces.
Diluted Alcohol, a sufficient quantity.	

Mix the Opium with half a pint of Water, and having covered the perforated diaphragm of the water-bath percolator with a piece of burlap pour the mixture upon it and set in a warm place for two days, then heat to about  $80^{\circ}$  C. ( $176^{\circ}$  F.) for four hours, add half a pint of Alcohol, and after half an hour begin to percolate, adding Diluted Alcohol to the drug and continuing the heat and percolation until 14 fluidounces have passed, which reserve. Continue the percolation with Diluted Alcohol until the drug is exhausted. Distill the Alcohol ( $\frac{1}{2}$  the measure) from this last portion

and evaporate the residue to a soft extract, which dissolve in the reserved portion and add enough Diluted Alcohol to make a pint of the Fluid Extract.

To make Tincture Opium, U. S., 1870, mix  $5\frac{1}{2}$  fl.ounces of this Fluid Extract with enough Diluted Alcohol to make a pint.

To make Tincture Opium, U. S., 1880, mix  $6\frac{1}{4}$  fl.ounces of this Fluid Extract with enough Diluted Alcohol to make a pint.

There is no particular standard among manufacturers for making this Fluid Extract, many of them making it of the same strength as Tincture of Opium. We have adopted this standard because it seems best adapted to the wants and uses of druggists.

Four minims represents a grain of Opium.

## FLUID EXTRACT OF OPIUM, DEODORIZED.

### *Liquid Extract of Opium, Deodorized.*

Opium, in coarse powder,	4 ounces av.
Gasoline (Petroleum Ether),	8 fl.ounces.
Alcohol,	4 fl.ounces.
Water, a sufficient quantity.	

Mix the Opium with a pint of Water, and having covered the perforated diaphragm of the water-bath percolator with a piece of burlap pour the mixture upon it and set in a warm place for two days; then heat to about  $85^{\circ}$  C. ( $185^{\circ}$  F.) for four hours, and begin to percolate, adding Water to the drug and continuing the heat and percolation until the drug is exhausted. Evaporate the percolate to half a pint, and when cool mix with it, in a quart bottle, half a pint of Gasoline, and agitate them frequently during twenty-four hours; then filter the mixture through a calico strainer, without pressure, and afterward pour the Gasoline from the purified solution; evaporate by water-bath until no odor of Gasoline remains; filter, and add to the filtrate 4 fl.ounces of Alcohol and enough Water to make a pint of the Fluid Extract.

To make the 1870 strength Deodorized Tincture of Opium, mix  $5\frac{1}{2}$  fluidounces of this Fluid Extract with 3 fluidounces of Alcohol and enough Water to make a pint.

To make the 1880 Tincture, mix  $6\frac{1}{4}$  fluidounces of this Fluid Extract with 3 fluidounces of Alcohol and enough Water to make a pint.

## FLUID EXTRACT OPIUM, CAMPHORATED.

*Concentrated Extract of Paregoric.*

Powdered Opium,	1 ounce av.
Benzoic Acid,	1 ounce av.
Camphor,	$\frac{3}{4}$ ounce av.
Oil of Anise,	1 fl.ounce.
Alcohol,	12 fluidounces.
Water, a sufficient quantity.	

Macerate the Powdered Opium with 2 ounces of hot Water, for two hours. Dissolve the Benzoic Acid, Camphor and Oil of Anise in the Alcohol, and having mixed the solution with the pulpy Opium mass, macerate it for seven days, then filter through paper, adding enough Alcohol through the filter to make a pint of the Fluid Extract.

To make Paregoric, mix 1 fluidounce of this Extract, 1 fluidounce of Glycerin and 14 fluidounces of Diluted Alcohol. This may be colored by adding to it half a fluidrachm of Fluid Extract of Liquorice Extract.

## FLUID EXTRACT TOLU.

*Liquid Extract of Tolu.*

Balsam of Tolu,	8 $\frac{1}{3}$ ounces av.
Alcohol, a sufficient quantity.	

Mix the Balsam with 8 ounces of Alcohol in a wide mouth bottle, and, having stopped it tightly, heat on a water-bath until the Balsam is dissolved; then strain through muslin and add enough Alcohol through the strainer to make a pint of the Fluid Extract.

To make the 1870 Tincture of Tolu, mix 3 $\frac{1}{4}$  fluid-ounces of this Extract with enough Alcohol to make a pint.

To make the 1880 Tincture, mix 2 $\frac{3}{4}$  ounces with enough Alcohol to make a pint.



## SPECIAL FLUID EXTRACTS.

Under this heading are included unofficinal Fluid Extracts of those substances which require special treatment, or which cannot be well represented in the general classification which is adopted in this work.

## FLUID EXTRACT OF CINCHONA, DETANNATED.

Mix 6 ounces of freshly precipitated, washed, moist Hydrated Peroxide of Iron (Ferric Hydrate) with a pint of Fluid Extract of Cinchona, and allow to stand for 4 days, shaking frequently; then filter, adding through the filter enough Diluted Alcohol to make the measure a pint. If the filtered extract still shows traces of Tannin when tested with Tincture of Chloride of Iron, add an ounce more of the moist Ferric Hydrate, and proceed as before, until it is detannated.

## FLUID EXTRACT GARLIC.

*Allium Sativum.*

Garlic, crushed,	16 ounces av.
Alcohol,	10 fl.ounces.
Water, a sufficient quantity.	

Mash the Garlic to a pumice in a mortar, pour the Alcohol upon it and macerate for twenty-four hours in a covered vessel in a warm place; transfer to the water-bath percolator, pack moderately, pour upon it sufficient Water to cover the drug, heat very moderately at once, and after one hour begin to percolate, adding Water to the drug and continuing the heat and percolation until a pint of the Fluid Extract has passed. Although this Fluid Extract does not properly come in this class it is placed here for want of a more convenient place.

## FLUID EXTRACT OF HYDRASTIS, PURIFIED.

*Fluid Hydrastis.*

Hydrastis, in No. 50 powder,	16 $\frac{2}{3}$ ounces av.
Glycerin,	5 fl.ounces.
Alcohol,	
Water, each, a sufficient quantity.	

Moisten the powder with 8 ounces of Alcohol and pack

firmly in the water-bath percolator, pour upon it a pint of Alcohol and set in a warm place for two days; then heat very moderately and after one hour begin to percolate, adding Alcohol to the drug and continuing the heat and percolation until it is exhausted. Distill the Alcohol from the percolate until it is reduced to a soft Extract. To this add the Glycerin and 6 ounces of Water, and agitate; then filter and add through the filter enough Water to make a pint of the Fluid Extract. The resinous matter remains on the filter. This makes a preparation similar to "Fluid Hydrastis," containing the valuable principles of the drug which are soluble in an aqueous menstruum, and omitting the objectional ones that are obtained when Water or Alcohol alone is used as a menstruum.

### FLUID EXTRACT IGNATIA BEAN.

Ignatia Bean, in No. 60 powder,     $16\frac{2}{3}$  ounces av.  
Alcohol,  
Water, each, a sufficient quantity.

This Fluid Extract is made with the same menstruum and in precisely the same manner as Fluid Extract of Nux Vomica, which see.

### FLUID EXTRACT OF SENNA, ALCOHOLIZED.

#### *Purified Fluid Extract of Senna.*

Senna, in No. 20 powder,                     $16\frac{2}{3}$  ounces av.  
Alcohol,  
Water, each, a sufficient quantity.

Pack the Senna moderately in the water-bath percolator, pour upon it enough Alcohol to saturate and cover it and set in a warm place for twenty-four hours; then heat very moderately and after one hour begin to percolate, adding a pint and a half of Alcohol to the drug and continuing the percolation until it will no longer drop. [The object of this proceeding is to remove from the Senna the principles which cause it to "gripe," when taken. The Alcohol which is used may be distilled.] Then pour Water upon the Senna and percolate until exhausted. Reserve the first 12 fluidounces that pass, evaporate the remainder to 4 fluidounces and add to the reserved portion to make a pint of the Purified Fluid Extract.

## FLUID EXTRACT VANILLA.

[One-half strength.]

Vanilla,  
Alcohol,

8 ounces av.

Water, each, a sufficient quantity.

Mix three measures of Alcohol with two measures of Water, and having cut the Vanilla in fine pieces and reduced it to a coarse powder by thoroughly beating in a mortar, moisten it with 6 ounces of the menstruum, pack firmly in the water-bath percolator, pour upon it 10 ounces of menstruum and set in a warm place for seven days; then heat moderately and after one hour begin to percolate slowly, adding menstruum to the drug and continuing the heat and percolation until  $14\frac{1}{2}$  fluidounces have passed, which reserve. Continue the percolation with the menstruum until the drug is exhausted, then distill the Alcohol from this last portion, evaporate the residue to a soft Extract, add to the reserved portion, and afterward, sufficient menstruum to make a pint of the Fluid Extract. After standing a few days filter through muslin.

It will be observed that this is but half the strength of ordinary fluid extracts. It is thus made because a fluid extract of full strength cannot be obtained without impairing the flavor of the preparation by the heat required to evaporate it.

To make Flavoring Extract of Vanilla from this Fluid Extract, use 2 fluidounces, with enough Alcohol and Water mixed in the proportion of three measures of Alcohol to two of Water to make a pint.

To make Tincture of Vanilla, U. S., 1880, use 3 ounces of this Fluid Extract with enough Alcohol and Water, mixed as above, to make a pint.

## FLUID EXTRACT WILD CHERRY, DETANNATED.

Mix 6 ounces of freshly precipitated, washed, moist, Hydrated Peroxide of Iron (Ferric Hydrate) with a pint of Fluid Extract of Wild Cherry and allow to stand for four days, shaking frequently; then filter, adding through the filter enough Diluted Alcohol to make the measure a pint.

If the filtered Extract still shows traces of Tannin, when tested with Tincture of Chloride of Iron, add an ounce more of the moist Ferric Hydrate and proceed as before until it is detannated.

## GREEN PLANT FLUID EXTRACTS.

Fluid Extracts prepared from recently gathered herbs, barks, flowers, roots, etc., have been extensively advertised by manufacturing houses, and some of them are deservedly popular with physicians. Although they cannot have the same uniformity of strength as Fluid Extracts prepared from dry drugs, yet many of them are stronger and better, especially such as depend for their medicinal value upon volatile principles, which would be lost by the process of drying. As there is no standard of strength established for green plant Fluid Extracts, except that the liquid shall be saturated with the medicinal properties of the drug, the following general formula, which is adapted for making all of them, is given. These Fluid Extracts are called by some manufacturers concentrated or specific tinctures :

## GENERAL FORMULA FOR GREEN PLANT FLUID EXTRACTS.

The Fresh Drug, cut, bruised, crushed,	
dessicated, or otherwise reduced to	
proper fineness for macerating and	
percolating,	a convenient quantity.
Alcohol,	a sufficient quantity.

Having reduced the drug to the proper fineness, pack it in the water-bath percolator, pour sufficient Alcohol upon it to saturate and cover it, and set in a warm place for 2 days ; then heat very moderately and after one hour begin to percolate slowly, and continue until the liquid ceases to drop. Reserve this portion and continue the percolation with Alcohol until the drug is exhausted. Distill the Alcohol from this last portion until the residue is reduced to the consistence of thin syrup, which add to the reserved portion to complete the Fluid Extract.

The Alcohol remaining in the Drug after percolation may be recovered by distillation.

The following are the drugs from which Green Plant Fluid Extracts are usually prepared.

The \* denotes that the Drug should be macerated as soon as gathered, the † denotes that it should be partly dried before macerating, and the ‡ denotes that the recently gath-

ered drug should be dried or nearly dried before making up. Herbs should be gathered when in flower, roots and barks in the autumn or early spring :

Latin name.	Common name.	Part used.
<i>Ailanthus Glandulosa</i> , . . .	Chinese Sumach, . . .	Root bark, crushed. †
<i>Aletris Farinosa</i> , . . .	Star Grass, Unicorn, . . .	Root, crushed. †
<i>Amygdalus Persica</i> , . . .	Common Peach, . . .	Leaves, bruised. *
<i>Arum Triphyllum</i> , . . .	Indian or Wild Turnip, . . .	Cormus, mashed. *
<i>Asclepias Tuberosa</i> , . . .	Pleurisy or White Root, . . .	Root crushed. †
<i>Baptisia Tinctoria</i> , . . .	Wild Indigo, . . .	Root crushed. †
<i>Berberis Aquifolium</i> , . . .	Oregon Grape, . . .	Root crushed. †
<i>Cimicifuga Racemosa</i> , . . .	Black Cohosh, . . .	Root crushed. †
<i>Cactus Grandiflora</i> , . . .	Fresh Plant, or . . .	Fresh flowers, bruised. *
<i>Cannabis Sativa</i> , . . .	American Hemp, . . .	Plant, bruised. *
<i>Cereus Bonplandi</i> , . . .	Cactus, . . .	Plant, mashed. *
<i>Chelodanum Majus</i> , . . .	Garden Celandine, . . .	Leaves, bruised. *
<i>Chionanthus Virginicus</i> , . . .	Fringe Tree, . . .	Bark, crushed. †
<i>Collinsonia Canadensis</i> , . . .	Stone Root, Ox Balm, . . .	Root, crushed. †
<i>Corydalis Formosa</i> , . . .	Turkey Corn or Pea, . . .	Root, crushed. †
<i>Cypripedium Pubescens</i> , . . .	Lady's Slipper, . . .	Root, cut and crushed. †
<i>Datura Stramonium</i> , . . .	Stramonium, . . .	Leaves, bruised. *
<i>Epilobium Paulustre</i> , . . .	Wickup, . . .	Herb, bruised. *
<i>Eridiction Glutinosum</i> , . . .	Yerba Santa, . . .	Leaves, bruised. *
<i>Eryngium Aquaticum</i> , . . .	Water Eryngo, . . .	Root, crushed. *
<i>Enonymus Atropurpureus</i> , . . .	Wahoo, . . .	Bark, crushed. †
<i>Euphorbia Hipericifolia</i> , . . .	Large Spotted Spurge, . . .	Leaves, bruised. *
<i>Frankenia Grandifolia</i> , . . .	Yerba Rheuma, . . .	Plant, cut.
<i>Gelsemium Scmpervirens</i> , . . .	Yellow Jasmine, . . .	Root, crushed. †
<i>Gossypium</i> , . . .	Cotton Root, . . .	Bark, crushed. †
<i>Grindelia Robusta</i> , . . .	. . . . .	Herb, bruised. *
<i>Grindelia Squarrosa</i> , . . .	. . . . .	Herb, bruised. *
<i>Helonias Diocia</i> , . . .	False Unicorn, . . .	Root crushed. †
<i>Iris Versicolor</i> , . . .	Blue Flag, . . .	Root crushed. †
<i>Juglans Cineria</i> , . . .	Butternut, . . .	Root bark, crushed. †
<i>Leptandra Virginica</i> , . . .	Culver's or Black Root, . . .	Root, crushed. †
<i>Lobelia Inflata</i> , . . .	Lobelia, . . .	Herb, bruised. *
<i>Lycopus Virginicus</i> , . . .	Bugleweed, . . .	Herb, bruised. *
<i>Macrotys Racemosa</i> , . . .	Black Cohosh, . . .	Root, crushed. †
<i>Oenothera Biennis</i> , . . .	Evening Primrose, . . .	Plant, bruised. *
<i>Penthorum Sedoides</i> , . . .	Virginia Stone Crop, . . .	Herb, bruised. *
<i>Phytolacca Decandra</i> , . . .	Poke, Skoke or Garget, . . .	Root, crushed. †
<i>Polygonum Punctatum</i> , . . .	Water Pepper, . . .	Herb, bruised. †
<i>Polymnia Uvedelia</i> , . . .	Bearsfoot, Leaf Cup, . . .	Root, bruised. *
<i>Populus Candicans</i> , . . .	Balm or Balsam Gilead, . . .	Buds bruised. *
<i>Ptelia Trifoliata</i> , . . .	Wafer Ash, . . .	Bark, crushed. †
<i>Rhus Toxicodendron</i> , . . .	Poison Oak or Ivy, . . .	Leaves, bruised. †
<i>Rhus Aromatica</i> , . . .	Aromatic Sumach, . . .	Root bark, crushed. *
<i>Scutellaria Laterifolia</i> , . . .	Sculleap, . . .	Herb, bruised. *
<i>Senecio Aureus</i> , . . .	Liferoot, Lifewort, . . .	Herb, bruised. *
<i>Stillingia Sylvatica</i> , . . .	Stillingia, Queen's Root, . . .	Root, crushed. †
<i>Symplocarpus Fœtidus</i> , . . .	Skunk Cabbage, . . .	Root, crushed. †
<i>Thuja Occidentalis</i> , . . .	Arbor Vitæ, . . .	Leaves, bruised. *
<i>Veratrum Viride</i> , . . .	American Hellebore, . . .	Root, crushed. *
<i>Vibunum Prunifolium</i> , . . .	Black Haw, . . .	Root bark, crushed. †

## FLUID EXTRACTS, CLASS A.

In this class are included all unofficinal Fluid Extracts made from drugs requiring *Alcohol* as a menstruum, except such as require special treatment or manipulation. To complete the formula for any Fluid Extract in this class, put the name of the drug and the fineness of the powder in the following

## GENERAL FORMULA:

The Drug in No. — powder,      16 $\frac{2}{3}$  ounces av.  
Alcohol, a sufficient quantity.

Moisten the powder with from 6 to 8 fluidounces of Alcohol, pack firmly in the water-bath percolator, pour upon it enough Alcohol to saturate and cover the drug and set in a warm place for two days; then heat very moderately and after one hour begin to percolate slowly, adding Alcohol to the drug and continuing the heat and percolation until 14 fluidounces have passed, which reserve. Turn off the heat and continue the percolation with Alcohol until the drug is exhausted. Distill the Alcohol from this last portion of the percolate until only 2 fluidounces remain, which add to the reserved portion to make a pint of the Fluid Extract. Lastly, after standing a few days filter through paper or muslin, adding enough Alcohol through the filter to make the measure a pint.

The Alcohol remaining in the drug after percolation may be recovered by distillation.

In the following list the \* denotes that a Fluid Extract is also made from the green plant or drug, and that a formula for making will be found among the Green Plant Fluid Extracts.

Latin Name.	Common Name.	Part used	Fineness of Powder.
<i>Actæa alba</i> , . . .	White Cohosh, . . . .	Root, . .	No. 60
<i>Actæa rubra</i> , . . .	Baneberry, red, . . . .	Root, . .	" 60
<i>Agaricus albus</i> , . .	White Agaric, . . . .	Fungus, . .	" 40
<i>Akasga</i> , . . . .	Bowdoin, Ikaju, Quai, .	Root, . .	" 60
<i>Alkanna</i> ( <i>Anchusa</i> ),	Alkanet, . . . . .	Root, . .	" 50
<i>Alstonia constricta</i> ,	Australian Bitter Bark, .	Bark, . .	" 60
<i>Alstonia scholaris</i> , .	Dita Bark, . . . . .	Bark, . .	" 60
<i>Angelica officinalis</i> ,	Angelica, . . . . .	Root, . .	" 60
<i>Apium graveolens</i> ,	Celery, . . . . .	Seed, . .	" 60
<i>Asarum Canadense</i> ,	Canada Snakeroot, . . .	Root, . .	" 60
<i>Asclepias cornuti</i> , .	Silkweed, . . . . .	Root, . .	" 60
<i>Asclepias incarnata</i> ,	White Indian Hemp, . .	Root, . .	" 60



Latin Name.	Common Name.	Part used.	Fineness of Powder.
* <i>Asclepias tuberosa</i> ,	Pleurisy, or White Root, .	Root, . .	No. 60
<i>Aspidium</i> (Filix Mas),	Male Fern, . . . . .	Root, . .	" 60
<i>Avena Sativa</i> , . .	Common Oats, . . . . .	Seed, . .	" 40
<i>Azederach</i> (mclia A.),	Pride of India or China, .	Root bark, .	" 60
* <i>Baptisia tinctoria</i> , .	Wild Indigo, . . . . .	Root, . .	" 60
<i>Boldus</i> (Peumus B.),	Boldo, . . . . .	Leaves, . .	" 50
<i>Boletus Laricis</i> , . .	Agaric, . . . . .	Fungus, . .	" 40
<i>Bryonia alba</i> , . .	Bryony, White, . . . . .	Root, . .	" 60
<i>Canella alba</i> , . .	Canella, . . . . .	Bark, . .	" 60
* <i>Cannabis sativa</i> , . .	American Hemp, . . . . .	Plant, . .	" 50
<i>Cantharis vesicatoria</i> ,	Cantharides, . . . . .	Whole fly, .	" 60
<i>Capsella</i> , B'a-Pastoris,	Shepherds Purse, . . . . .	Herb, . .	" 50
<i>Cardamomum</i> , . . .	Cardamom, . . . . .	Seed, . .	" 60
<i>Carophyllus</i> , . . .	Cloves, . . . . .	Flower buds, .	" 60
* <i>Cereus</i> , . . . . .	Cactus, . . . . .	Plant, . .	" 50
<i>Chenopodium</i> , . . .	Wormseed, . . . . .	Seed, . .	" 60
<i>Cinnamomum</i> , . . .	Cassia or Cinnamon, . . .	Bark, . .	" 60
<i>Cocculus Indicus</i> , .	Fish Berries, . . . . .	Fruit, . .	" 60
<i>Convallaria Majalis</i> ,	Lily of the Valley, . . . . .	Root or flow's,	" 60
<i>Coriandrum</i> , . . .	Coriander, . . . . .	Fruit, . .	" 60
<i>Curcuma longa</i> , . .	Turmeric, . . . . .	Rhizome, . .	" 60
<i>Delphinium consolida</i> ,	Larkspur, . . . . .	Seed, . .	" 60
<i>Delp'm Staphisagria</i> ,	Stavesacre, . . . . .	Seed, . .	" 60
<i>Dioscorca villosa</i> , .	Wild Yam, . . . . .	Rhizome, . .	" 60
<i>Dipterix odorata</i> , .	Tonka, Tonqua, or T. Bean,	Seed, . .	" 60
<i>Dita</i> (Alst'a scholaris),	Dita Bark, . . . . .	Bark, . .	" 60
<i>Drosera</i> , . . . . .	Sundew, . . . . .	Herb, . .	" 40
<i>Drimys Winteria</i> , .	Winter's Bark, . . . . .	Bark, . .	" 60
<i>Erechthites hieracif</i> a,	Fireweed, . . . . .	Herb, . .	" 40
<i>Erigcron Canadense</i> ,	Canada Fleabanc, . . . . .	Herb, . .	" 40
* <i>Eriodictyon</i> , . . .	Yerba Santa, . . . . .	Leaves, . .	" 50
* <i>Euphorbia corollata</i> ,	Large Flowering Spurge, .	Root, . .	" 60
<i>Filix Mas</i> (Aspid'm),	Male Fern, . . . . .	Root, . .	" 60
<i>Galanga</i> , . . . . .	Galangal (Catarrh Root), .	Rhizome, . .	" 60
<i>Gillenia stipulacea</i> ,	American Ipecac, . . . . .	Root, . .	" 60
<i>Gillenia trifoliata</i> , .	Indian Physic, . . . . .	Root, . .	" 60
<i>Guaiacum lignum</i> , .	Guaiac, . . . . .	Wood, . .	" 50
* <i>Helonias</i> , . . . . .	False Unicorn, . . . . .	Root, . .	" 60
<i>Hibiscus Abelmos's</i> ,	Amber or Ambrette, . . .	Seeds, . .	" 50
<i>Humulus</i> , . . . . .	Hops, . . . . .	Flowers, . .	" 50
<i>Hyoscyami semen</i> , .	Henbane, . . . . .	Seed, . .	" 60
<i>Ignatia</i> , . . . . .	Ignatia Bean, . . . . .	Seed, . .	" 60
<i>Imperatoria</i> , . . .	Masterwort, . . . . .	Rhizome, . .	" 60
<i>Iris Florentina</i> , . .	Orris Root, . . . . .	Rhizome, . .	" 60
<i>Jalapa</i> (Ipomea J'a),	Jalap, . . . . .	Tuber, . .	" 60
<i>Kamala</i> (Rottlera), .	Kameela, . . . . .	Glands, etc.,	" 60
<i>Kava</i> (Methisticum),	Ava Kava, . . . . .	Root, . .	" 60
<i>Levisticum</i> , . . . .	Lovage, . . . . .	Root or seed,	" 60
<i>Lindera</i> , . . . . .	Spicewood, Fever Bush, .	Berries or b'k,	" 60
<i>Liquidambar</i> , . . .	Sweet Gum Tree, . . . . .	Bark, . .	" 60
<i>Lippia Mexicana</i> , . .	. . . . .	Herb, . .	" 50
<i>Liriodendron</i> , . . .	Tulip Tree, Whitewood, .	Bark, . .	" 60
* <i>Lobelia</i> , . . . . .	Lobelia, Indian Tobacco,	Seed, . .	" 60
<i>Magnolia glauca</i> , .	Magnolia, . . . . .	Flowers or b.,	" 50



Latin Name.	Common Name.	Part used.	Fineness of Powder.
Methysticum, . . .	Ava Kava, Kava Kava, . .	Root, . . .	No. 60
Micromeria, . . .	Yerba Buena, . . . . .	Plant, . . .	" 50
Myrica cerefera, . .	Bayberry, . . . . .	Bark, . . .	" 60
Myristica fragrans, .	Mace or Nutmeg, . . . .	Seed, . . .	" 60
Petroselinum, . . .	Parsley Seed, . . . . .	Fruit, . . .	" 60
Peumus Boldus, . . .	Boldo, . . . . .	Leaves, . . .	" 50
Phelandrium, . . .	Water Fennel Seed, . . .	Fruit, . . .	" 50
Physostigma, . . .	Calabar Bean, . . . . .	Seed, . . .	" 60
Pimenta, . . . . .	Allspice, . . . . .	Fruit, . . .	" 60
Piper Methysticum, .	Ava or Kava Kava, . . .	Root, . . .	" 60
Piper Nigrum, . . .	Black Pepper, . . . . .	Fruit, . . .	" 60
Pimpinella saxifraga,	Pimpernel, Small Saxifrage,	Root, . . .	" 60
*Populus Candicans,	Balm or Balsam of Gilead,	Leaf buds, .	" 40
Pyrethrum, . . . .	Pellitory, . . . . .	Root, . . .	" 60
*Rhus Toxicodendron,	Poison Ivy or Oak, . . .	Leaves, . . .	" 40
Ricinus, . . . . .	Castor Oil Bean, . . . .	Seed, . . .	" 50
Rottleræ glandulæ,	(Kamala) Kameela, . . .	Glands, etc.,	" 60
Sabadilla, . . . . .	Cevadilla, . . . . .	Seed, . . .	" 60
Santalum citrinum,	White or Yellow Santal, .	Wood, . . .	" 60
Santalum rubrum, . .	Red Saunders, . . . . .	Wood, . . .	" 60
Santonica, . . . . .	Wormseed, unexpanded, .	Flower heads,	" 40
Silphium lacinatedum,	Rosin weed, . . . . .	Root, . . .	" 60
Staphisagria (Del.S.),	Stavesacre, . . . . .	Seed, . . .	" 60
Strychnos Ignatia, .	Ignatia Bean, . . . . .	Seed, . . .	" 60
Sumbul (Ferula S.),	Musk root, . . . . .	Root, . . .	" 60
Thuja occidentalis,	Arbor Vitæ, Thuya, . . .	Twigs, . . .	" 30
Trillium pendulum,	Beth or Birth Root, . . .	Root, . . .	" 60
Turnera aphrodis'ca,	Damiana, . . . . .	Leaves, . . .	" 50
Urechites suberecta, .	. . . . .	Leaves, . . .	" 50
Veratrum sabadilla,	Cevadilla, . . . . .	Seed, . . .	" 60
Wintera (Drimys W.),	Winter's Bark, . . . . .	Bark, . . .	" 60
Nauthoxylum, . . .	Prickly Ash Berries. . .	Fruit, . . .	" 50
Zedoaria, . . . . .	Zedoary, . . . . .	Root, . . .	" 60

## FLUID EXTRACTS CLASS B.

The following drugs require a menstruum of three measures of Alcohol to one measure of Water for preparing their Fluid Extracts.

To complete the formula for any Fluid Extract in this class put the name of the drug and the fineness of powder required in the following

## GENERAL FORMULA.

The Drug, in No.      powder,      16 $\frac{2}{3}$  ounces av.  
 Alcohol,  
 Water, each, a sufficient quantity.

Mix three measures of Alcohol with 1 measure of Water,

and having moistened the drug with from 8 to 10 ounces of the mixture, macerate for 24 hours in a covered vessel in a warm place; transfer to the water-bath percolator, pack firmly, pour upon it sufficient menstruum to saturate and cover the drug and set in a warm place for two days; then heat moderately and after one hour begin to percolate slowly, adding menstruum to the drug and continuing the heat and percolation until 13 ounces have passed, which reserve. Turn off the heat and continue the percolation with the menstruum until the drug is exhausted. Distill the Alcohol ( $\frac{3}{4}$  of the measure) from this last portion, evaporate the residue to a soft extract, which dissolve in the reserved portion and add enough of the menstruum to make a pint of the Fluid Extract. The Alcohol remaining in the drug after percolation may be recovered by distillation.

The \* indicates that Fluid Extracts are also prepared from the fresh or green drug. See Green Plant Fluid Extract.

Latin Name.	Common Name.	Part used.	Powder No.
<i>Acalypha Virginica</i> , . . .	Mercury Weed, . . .	Herb, . . .	40
<i>Anemopsis Californica</i> , .	Yerba Mansa, . . .	Plant, . . .	40
* <i>Arum triphyllum</i> , . . .	Wild or Indian Turnip.	Cormus, . .	50
<i>Asimina triloba</i> , . . .	Pawpaw, . . . . .	Seed, . . .	50
<i>Aspidosperma</i> , . . . . .	Quebracho, . . . . .	Bark, . . .	50
* <i>Baccharis pilularis</i> , . . .	Kidney Root, . . . .	Root, . . .	50
* <i>Calycanthus Floridus</i> , . .	Carolina Allspice, . .	Bark, . . .	50
<i>Cascarilla (Croton Eluteria)</i>	Cascarilla, . . . . .	Bark, . . .	50
<i>Cochlearia armoracia</i> , . .	Horseradish, . . . .	Root, . . .	50
Coto (add 4 fl. oz. Glycerin)	Coto Bark, . . . . .	Bark, . . .	50
<i>Eremocarpus Setigerus</i> , .	Ginger Leaf, . . . . .	Herb, . . .	40
<i>Erythrophloeum, Casea</i> , . .	Sassy or Maneona, . .	Bark, . . .	50
<i>Ephedra Antisyphilitica</i> , .	Ephedra, . . . . .	Plant, . . .	50
<i>Euphorbia Ipecacuanha</i> . .	Ipecacuanha Spurge, .	Root, . . .	50
<i>Euphorbia pilulifera</i> , . . .	Pill Bearing Spurge, .	Plant, . . .	40
* <i>Grindelia squarrosa</i> , . . .	. . . . .	Leaves, tops,	40
<i>Juglans cinerea</i> , . . . . .	American Butternut, .	Root bark,	50
<i>Menispermum</i> , . . . . .	Yellow Parilla, . . .	Root, . . .	50
<i>Mercurialis annua</i> , . . . .	Mercury Herb, . . . .	Herb, . . .	40
<i>Nectandra</i> , . . . . .	Bebeeru, . . . . .	Bark, . . .	50
* <i>Polygonum</i> , . . . . .	Smartweed, . . . . .	Herb, . . .	30
* <i>Polymnia uvedalia</i> , . . . .	Bearsfoot, Leafcup, . .	Root, . . .	50
<i>Sassafras officinalis</i> , . . .	Sassafras. . . . .	Root bark,	50
* <i>Stramonium (Datura S.)</i> , .	Stramonium, . . . . .	Leaves, . .	40

## FLUID EXTRACTS CLASS C.

The following drugs require a menstruum of two measures of Alcohol to one measure of Water, for preparing their Fluid Extracts. To complete the formula for any Fluid Ex-

tract in this class put the name of the drug and the fineness of powder required in the following

## GENERAL FORMULA.

The Drug in No.      powder,      16 $\frac{2}{3}$  ounces av.  
 Alcohol,  
 Water, each, a sufficient quantity.

Mix two measures of Alcohol with one measure of Water and having moistened the drug with from 8 to 10 ounces of the mixture, macerate for 24 hours in a covered vessel in a warm place; transfer to the water-bath percolator, pack firmly, pour upon it sufficient menstruum to saturate and cover the drug, and set in a warm place for two days; then heat moderately and after one hour begin to percolate slowly, adding menstruum to the drug, and continuing the heat and percolation until 13 ounces have passed, which reserve. Turn off the heat and continue the percolation with the menstruum until the drug is exhausted. Distill the Alcohol ( $\frac{2}{3}$  of the measure) from this last portion, evaporate the residue to a soft extract, which dissolve in the reserved portion and add enough of the menstruum to make a pint of the Fluid Extract. The Alcohol remaining in the drug after percolation may be recovered by distillation.

The \* indicates that Fluid Extracts are also prepared from the fresh or green drug. See Green Plant Fluid Extract.

Latin Name.	Common Name.	Part used.	Powder No.
Acacia jurcma, . . . . .	Adstringens, . . . . .	Bark, . . .	50
Aconiti folia, . . . . .	Aconite, Monshood, . . . . .	Leaves, . . .	30
Æsculus glabra, . . . . .	Buckeye, . . . . .	Bark, . . .	40
Æsculus Hippocastanum, . . . . .	Horse Chesnut, . . . . .	Seed, . . .	40
*Ailanthus, . . . . .	Tree of Heaven, . . . . .	Root bark, . . .	40
Adansonia digitata, . . . . .	Baobab, . . . . .	Bark, . . .	40
Alnus rubra (or Serrulata) . . . . .	Tag Alder, . . . . .	Bark, . . .	40
Althææ radix, . . . . .	Marsh Mallow, . . . . .	Root, . . .	20
Anemopsis Californica, . . . . .	Herba Mansa, . . . . .	Root, . . .	40
Anethum graveolens, . . . . .	Dill Seed, . . . . .	Fruit, . . .	40
Angostura (Galip'cuspora), . . . . .	Angustura, . . . . .	Bark, . . .	50
Anisum, . . . . .	Anise Seed, . . . . .	Fruit, . . .	40
Apocynum androsæ'um, . . . . .	Bitter Root, . . . . .	Root, . . .	50
Apocynum cannabinum, . . . . .	Black Indian Hemp, . . . . .	Root, . . .	50
Arnice flores, . . . . .	Arnica Flowers, . . . . .	Flowers, . . .	30
Artemesia frigida . . . . .	Mountain Sage, . . . . .	Plant, . . .	30
Artemesia vulgaris, . . . . .	Mugwort, . . . . .	Root, . . .	40
Asclepias curassavica, . . . . .	Blood Flower, . . . . .	Plant, . . .	30
Belladonnæ folia, . . . . .	Belladonna, . . . . .	Leaves, . . .	30
*Berberis aquifolium, . . . . .	Oregon Grape, . . . . .	Root, . . .	50
Berberis vulgaris, . . . . .	Barberry, . . . . .	Bark, . . .	50

Latin Name.	Common Name.	Part used.	Powder No.
<i>Betonica officinalis</i> , . . . . .	Betony, . . . . .	Herb, . . . . .	30
<i>Buxus sempervirens</i> , . . . . .	Box, . . . . .	Bark or lvs, . . . . .	30
<i>Calendula</i> , . . . . .	Marigold, . . . . .	Flowers, . . . . .	30
<i>Carum carvi</i> , . . . . .	Caraway Seed, . . . . .	Fruit, . . . . .	50
<i>Carota</i> , ( <i>Daucus C.</i> ) . . . . .	Carrot Seed, . . . . .	Fruit, . . . . .	50
<i>Catalpa</i> , ( <i>Bigonia C.</i> ) . . . . .	Cigar Tree, . . . . .	Bark, pods, . . . . .	50
<i>Caullophyllum</i> , . . . . .	Blue Cohosh, . . . . .	Root, . . . . .	50
* <i>Cheledonium majus</i> , . . . . .	Garden Celandine, . . . . .	Herb, . . . . .	40
<i>Chiococca racemosa</i> , . . . . .	Cachinca, . . . . .	Root bark, . . . . .	40
<i>Chrysophyllum</i> , . . . . .	Monesia, . . . . .	Bark, . . . . .	40
* <i>Collinsonia</i> , . . . . .	Stone Root, Heal All, . . . . .	Root, . . . . .	40
<i>Corallorhiza</i> , . . . . .	Coral Root, Crawley, . . . . .	Root, . . . . .	50
* <i>Corydalis</i> ( <i>Dicentra Can.</i> ) . . . . .	Turkey Corn, . . . . .	Tuber, . . . . .	50
<i>Corypha cerefera</i> , . . . . .	Carnauba, Wax Palm, . . . . .	Root, . . . . .	50
<i>Cuminum Cyminum</i> , . . . . .	Cummin Seed, . . . . .	Fruit, . . . . .	50
* <i>Draconitum</i> , . . . . .	Skunk Cabbage, . . . . .	Root, . . . . .	50
<i>Duboisia Myoporoides</i> , . . . . .	Duboisia, . . . . .	Leaves, . . . . .	30
<i>Equiscium</i> , . . . . .	Horsetail, . . . . .	Stems, . . . . .	40
* <i>Eryngium aquaticum</i> , . . . . .	Water Eryngo, . . . . .	Root, . . . . .	50
<i>Eryngium yuccæfolium</i> , . . . . .	Corn Snakeroot, . . . . .	Root, . . . . .	50
* <i>Ethnonymus</i> , . . . . .	Wahoo, . . . . .	Bark, . . . . .	50
<i>Foeniculum</i> , . . . . .	Fennel Seed, . . . . .	Fruit, . . . . .	50
<i>Franseria uniflora</i> , . . . . .	Manaca, . . . . .	Root, . . . . .	50
<i>Garrya Frementii</i> , . . . . .	Quinine Bush, . . . . .	Herb, . . . . .	40
<i>Hedeoma</i> , . . . . .	Pennyroyal, . . . . .	Leaves, . . . . .	30
<i>Helianthus</i> , . . . . .	Sunflower, . . . . .	Seed, . . . . .	30
<i>Helleborus niger</i> , . . . . .	Black Hellebore, . . . . .	Root, . . . . .	50
<i>Hyoscyami radix</i> , . . . . .	Henbane, . . . . .	Root, . . . . .	50
<i>Illicium Anisatum</i> , . . . . .	Star Anise Seed, . . . . .	Fruit, . . . . .	50
<i>Inula Helenium</i> , . . . . .	Elecampane, . . . . .	Root, . . . . .	50
<i>Laurus nobilis</i> , . . . . .	Bay Laurel, Bay Tree, . . . . .	Leaves, . . . . .	30
<i>Ledum palustre</i> , . . . . .	Labrador Tea, . . . . .	Twigs, tops, . . . . .	40
<i>Manzanata</i> ( <i>Arctostaphylos</i> ), . . . . .	Glauca, . . . . .	Leaves, . . . . .	30
<i>Matricaria</i> , . . . . .	German Chamomile, . . . . .	Flowers, . . . . .	20
<i>Monarda fistulosa</i> , . . . . .	Wild Bergamot, . . . . .	Herb, . . . . .	30
<i>Monarda punctata</i> , . . . . .	Horsemint, . . . . .	Herb, . . . . .	30
<i>Monotropa uniflora</i> , . . . . .	Fit Root, Ice Plant, . . . . .	Plant, . . . . .	30
<i>Myrtus Checan</i> , . . . . .	Cheken, Chequin, . . . . .	Leaves, . . . . .	40
<i>Nuphar advena</i> , . . . . .	Yellow Pond Lily, . . . . .	Root, . . . . .	40
<i>Nymphaea odorata</i> , . . . . .	White Pond Lily, . . . . .	Root, . . . . .	40
<i>Onosmodium Virginianum</i> , . . . . .	False Gromwell, . . . . .	Seeds, root, . . . . .	40
<i>Origanum</i> , . . . . .	Wild Marjoram, . . . . .	Herb, . . . . .	30
<i>Paeonia officinalis</i> , . . . . .	Peony, . . . . .	Root, . . . . .	50
* <i>Penthorium sedoides</i> , . . . . .	Virginia Stone Crop, . . . . .	Herb, . . . . .	30
* <i>Phytolacca</i> , . . . . .	Garget or Poke, . . . . .	Root, . . . . .	50
<i>Phellandrium aquaticum</i> , . . . . .	Water Fennel, . . . . .	Seed, . . . . .	40
<i>Piscidia</i> , . . . . .	Jamaica Dogwood, . . . . .	Root bark, . . . . .	50
<i>Polemonium reptans</i> , . . . . .	Abscess Root, . . . . .	Root, . . . . .	50
<i>Polygonatum giganteum</i> , . . . . .	Solomons Seal, . . . . .	Root, . . . . .	30
<i>Potentilla Canadensis</i> , . . . . .	Cinquefoil, Fircfinger, . . . . .	Plant, . . . . .	30
<i>Potentilla Tormentilla</i> , . . . . .	Tormentil, . . . . .	Root, . . . . .	40
<i>Populus alba</i> , . . . . .	White Poplar, . . . . .	Inner bark, . . . . .	50
<i>Ptelea trifoliata</i> , . . . . .	Waferash, Hoptree, . . . . .	Inner bark, . . . . .	50
<i>Pulsatilla</i> ( <i>Anemone P.</i> ) . . . . .	Pulsatilla, . . . . .	Herb, . . . . .	30

Latin Name.	Common Name.	Part used.	Powder No.
<i>Pycnanthemum</i> , . . . .	Mountain Mint, . . . .	Herb, . . . .	30
<i>Quillaia</i> , . . . .	Soap Tree, . . . .	Bark, . . . .	50
* <i>Rhus aromatica</i> , . . . .	Sweet Sumach, . . . .	Root bark, . . . .	50
<i>Rhododendron maximum</i> , . . . .	Great Laurel, . . . .	Inner bark, . . . .	50
<i>Robina</i> , . . . .	Locust Tree, . . . .	Leaves, . . . .	40
<i>Sabal serrulata</i> , . . . .	Palmetto Saw Berries, . . . .	Fruit, . . . .	40
<i>Salix alba</i> , . . . .	White Willow, . . . .	Bark, . . . .	40
<i>Salix nigra</i> , . . . .	Black Willow, . . . .	Bark, . . . .	40
<i>Saponaria</i> , . . . .	Soapwort, . . . .	Root, . . . .	50
<i>Satureja hortensis</i> , . . . .	Summer Savory, . . . .	Herb, . . . .	30
<i>Sessamum orientale</i> , . . . .	Benne, . . . .	Leaves, . . . .	30
<i>Simaba Cedron</i> , . . . .	Cedron Seed, . . . .	Seed, . . . .	50
<i>Sterculia acuminata</i> , . . . .	Cola or Kola, . . . .	Nuts, . . . .	50
<i>Symplocarpus</i> ( <i>Draconitum</i> ) . . . .	Skunk Cabbage, . . . .	Root, . . . .	50
<i>Veratrum album</i> , . . . .	White Hellebore, . . . .	Root, . . . .	50
<i>Xanthium Strumarium</i> , . . . .	Cocklebur, . . . .	Burrs, . . . .	40
<i>Xanthium spinosum</i> , . . . .	Spiny Burweed, . . . .	Plant, . . . .	40
<i>Uvularia perfoliata</i> , . . . .	Bellwort, . . . .	Root, . . . .	40
<i>Viburnum opulus</i> , . . . .	Cramp, Cranberry, . . . .	Bark, . . . .	40
<i>Zanthorrhiza Apiifolia</i> , . . . .	Yellow Root, . . . .	Root, . . . .	50

## FLUID EXTRACTS CLASS D.

The following drugs require Diluted Alcohol as a menstruum for preparing their Fluid Extracts; equal measure of Alcohol and water, although it is not the present officinal standard for Diluted Alcohol, will be of sufficient Alcoholic strength for these Fluid Extracts. To complete the formula for any Fluid Extract in this class, put the name of the drug and the fineness of powder required in the following

## GENERAL FORMULA.

The Drug in No. . . . powder, 16 $\frac{2}{3}$  ounces av.  
Diluted Alcohol, a sufficient quantity.

Moisten the drug with from 8 to 10 ounces of Diluted Alcohol and macerate for 24 hours in a covered vessel in a warm place; transfer to the water-bath percolator, pack firmly, pour upon it sufficient Diluted Alcohol to saturate and cover the drug, and set in a warm place for two days, then heat moderately and after one hour begin to percolate slowly, adding Diluted Alcohol to the drug and continuing the heat and percolation until 13 ounces have passed, which reserve. Turn off the heat and continue the percolation with Diluted Alcohol until the drug is exhausted. Distill the Alcohol ( $\frac{1}{2}$  the measure) from this last portion, evaporate the residue to a soft extract, which dissolve in the

reserved portion and add enough Diluted Alcohol to make a pint of the Fluid Extract. The Alcohol remaining in the drug after percolation may be recovered by distillation.

The \* indicates that Fluid Extracts are also prepared from the fresh or green drug. See Green Plant Fluid Extract.

Latin Name.	Common Name.	Part used.	Powder No.
<i>Abies balsamea</i> , . . . .	Balsam Fir Tree, . .	Inner bark, . .	40
<i>Absinthium</i> ( <i>Artemesia</i> ) . .	Wormwood, . . . .	Leaves, tops, . .	30
<i>Acanthus mollis</i> , . . . .	Acanthus, . . . .	Leaves, . . . .	30
<i>Achillea millefolium</i> , . . .	Yarrow, . . . .	Leaves, tops, . .	30
<i>Adiantum</i> , . . . .	Maidenhair Fern, . .	Plant, . . . .	30
<i>Agrimonia Eupatoria</i> , . . .	Agrimony, . . . .	Whole plant, . .	30
* <i>Aletris farinosa</i> , . . . .	Unicorn, Star Grass, .	Root, . . . .	50
<i>Althææ flores</i> , . . . .	Marshmallow, . . . .	Flowers, . . . .	20
<i>Ambrosia trifida</i> , . . . .	Richweed, Ragweed, .	Herb, . . . .	30
<i>Ampelopsis</i> , . . . .	Virginia Creeper, . .	Twigs, bark, . .	30
* <i>Amygdalus Persica</i> , . . . .	Peach Tree, . . . .	Leaves, . . . .	30
<i>Anagallis arvensis</i> , . . . .	Scarlet Pimpernel, . .	Herb, . . . .	30
<i>Anemone</i> , . . . .	Wood Anemone, . . .	Herb, . . . .	30
<i>Anthemis nobilis</i> , . . . .	English Chamomile, . .	Flowers, . . . .	30
<i>Andira inermis</i> , . . . .	Cabbage Tree, Yellow .	Bark, . . . .	40
<i>Aralia hispida</i> , . . . .	Dwarf Elder, . . . .	Root, . . . .	40
<i>Aralia spinosa</i> , . . . .	Southern Prickly Ash, .	Bark, . . . .	40
<i>Aralia nudicaulis</i> , . . . .	Amer. Sarsaparilla, . .	Root, . . . .	30
<i>Aralia racemosa</i> , . . . .	Spikenard, . . . .	Root, . . . .	30
<i>Areca catechu</i> , . . . .	Betel nut, . . . .	Seed, . . . .	50
<i>Aster punicus</i> , . . . .	Red Stalked Aster, . .	Root, . . . .	40
<i>Asparagus officinalis</i> , . . .	Asparagus, . . . .	Young shoots, . .	30
<i>Aurantii cortex, dulcis</i> , . . .	Sweet Orange Peel, . .	Fruit rind, . . .	20
<i>Betula Lenta</i> , . . . .	Black or Cherry Birch, .	Bark, . . . .	40
<i>Bidens bipinnata</i> , . . . .	Spanish Needles, . . .	Root, . . . .	50
<i>Bistorta</i> ( <i>Polygonum B.</i> ) . . .	Bistort, Snakeweed, . .	Rhizome, . . . .	50
<i>Borago officinalis</i> , . . . .	Borage, . . . .	Herb, . . . .	30
<i>Caffæa</i> , . . . .	Coffee Berries, green . .	Seeds, . . . .	30
<i>Caffæa tosta</i> , . . . .	Coffee Berries, roasted .	Seeds, . . . .	40
<i>Carduus Benedictus</i> , . . . .	Blessed Thistle, . . . .	Leaves, tops, . .	30
<i>Carya alba</i> , . . . .	White Hickory, . . . .	Inner bark, . . .	50
<i>Carthamus tinctorius</i> , . . . .	Safflower, Am. Saffron, .	Flowers, . . . .	30
<i>Cascara amara</i> , . . . .	Honduras Bark, . . . .	Bark, . . . .	40
<i>Cascara sagrada</i> , . . . .	Rhamnus Prushiana, . .	Bark, . . . .	50
<i>Cataria</i> ( <i>Nepeta C.</i> ) . . . .	Catnip, Catmint, . . .	Herb, . . . .	30
<i>Cephalanthus</i> , . . . .	Button Bush, . . . .	Bark, . . . .	50
<i>Celastrus scandens</i> , . . . .	Staff Tree, . . . .	Root bark, . . .	50
<i>Cercis Canadensis</i> , . . . .	Judas Tree, . . . .	Root bark, . . .	50
<i>Cetraria</i> , . . . .	Iceland Moss, . . . .	Entire Plant, . .	20
<i>Ceanothus Americanus</i> , . . .	Jersey Tea, Red Root, .	Root, . . . .	50
<i>Chelone glabra</i> , . . . .	Balmoney, Snakehead, .	Herb, . . . .	20
<i>Chicorium Intybus</i> , . . . .	Chicory, . . . .	Root, . . . .	20
<i>China</i> ( <i>Smilax glabra</i> ), . . .	China Root, . . . .	Rhizome, . . . .	40
* <i>Chionanthus Virginica</i> , . . .	Fringe Tree, . . . .	Root bark, . . .	50
<i>Cochleria</i> , fresh, . . . .	Scurvy Grass, . . . .	Bruised herb, . .	20
<i>Colocynthus</i> , . . . .	Colocynth, Bitter Apple, .	Fruit, . . . .	20
<i>Comptonia asplenifolia</i> , . . .	Sweet Fern, . . . .	Herb, . . . .	30

Latin Name.	Common Name.	Part used.	Powder No.
Conii folia, . . . . .	Cicuta, Conium, . . .	Leaves, . .	30
Convulvulus panduratus, .	Wild Jalap, . . . . .	Root, . .	40
Coptis tceta, . . . . .	East Indian Coptis, .	Rhizome, .	40
Coptis trifolia, . . . . .	Coptis, Gold Thread, .	Entire Plant	30
Cornus circinata, . . . . .	Green Ozier, . . . . .	Bark, . .	50
Cornus sericea, . . . . .	Swamp Dogwood, . . .	Bark, . .	50
Crocus sativus, . . . . .	True Saffron, . . . . .	Stigmas, .	30
Cucumis citrullus, . . . . .	Watermelon Seed, . . .	Seed, . .	30
Cucumis pepo, . . . . .	Pumpkin Seed, . . . . .	Seed, . .	30
Cunderango, . . . . .	Conderango, . . . . .	Bark, . .	40
Cunila Mariana, . . . . .	Dittany, American, . .	Root, . .	40
Cynoglossum, . . . . .	Hound's Tongue, . . .	Herb, . .	30
Cyperus articulatus, . . .	Adrue, . . . . .	Root, . .	40
Diospyros Cortex, . . . . .	Persimmon, . . . . .	Bark, . .	40
Dispyros fructus, . . . . .	Persimmon, . . . . .	Green Fruit,	12
Dirca palustris, . . . . .	Leatherwood, . . . . .	Bark, . .	40
Dulcamara (Solanum D.) .	Bittersweet, . . . . .	Twigs, . .	40
Elephantopus tomentosus, .	Elephant's Foot, . . .	Herb, . .	30
Epiphegus (Orobanche), .	Cancer Root, . . . . .	Plant, . .	40
Epigæa repens, . . . . .	Trailing Arbutus, . . .	Leaves, . .	30
*Epilobium, . . . . .	Wickup or Willow, . .	Herb, . .	30
Erythracea, . . . . .	Canchalagua, . . . . .	Herb, . .	30
Erythraea Centaurium, . .	European Centaury, . .	Herb, . .	30
Eupatorium aromaticum, . .	White Snakeroot, . . .	Root, . .	40
Eupatorium perfoliatum, . .	Boneset, Thoroughwort,	Herb, . .	30
Eupatorium purpureum, . .	Queen of the Meadow,	Root, . .	50
Euphrasia, . . . . .	Eyebright, . . . . .	Herb, . .	30
Fagus ferruginea, . . . . .	American Beech, . . .	Inner bark,	40
*Frankenia, . . . . .	Verba Rheuma, . . . . .	Plant, . .	30
Fraseria, . . . . .	American Columbo, . .	Root, . .	30
Fraxinus Americana, . . .	White Ash, . . . . .	Bark, . .	50
Fraxinus sambucifolia, . .	Black Ash, . . . . .	Bark, . .	50
Fucus vesiculosus, . . . .	Bladder or Sea Wrack,	Plant, . .	20
Fumaria officinalis, . . .	Fumatory, . . . . .	Leaves, . .	30
Galla, . . . . .	Nutgall, . . . . .	Exerescences	40
Galium aperine, . . . . .	Cleavers, . . . . .	Herb, . .	30
Galium verum, . . . . .	Lady's Bedstraw, . . .	Herb, . .	30
Gaultheria, . . . . .	Wintergreen, . . . . .	Leaves, . .	30
Gentiana quinqueflora, . .	Five-Flowcred Gentian	Plant, . .	30
Geum rivale, . . . . .	Water Avens, . . . . .	Root, . .	40
Geum urbanum, . . . . .	European Avens, . . .	Root, . .	40
Gnaphalium, . . . . .	Life Everlasting, . . .	Herb, . .	30
Gouania Domingensis, . .	Chewstick, . . . . .	Stems, . .	40
Granati fructus cortex, . .	Pomegranate, . . . . .	Fruit rind,	20
Granatum, . . . . .	Pomegranate, . . . . .	Root bark,	50
Gratiola officinalis, . . .	Hedge Hyssop, . . . . .	Herb, . .	30
Guaco (Mikania G.) . . .	Guaco, . . . . .	Leaves, . .	30
Hæmatoxylon, . . . . .	Logwood, . . . . .	Wood, . .	40
Hamamelidis cortex, . . .	Witch Hazel, . . . . .	Bark, . .	50
Helianthemum, . . . . .	Frostwort, Rockrose, .	Herb, . .	30
Hemidesmus, . . . . .	Indian Sarsaparilla, .	Root, . .	40
Hepatica, . . . . .	Liverwort, Kidney leaf	Leaves, . .	30
Heracleum, . . . . .	Masterwort, . . . . .	Leaves, Root,	30
Heuchera, . . . . .	Alum Root, . . . . .	Root, . .	40



Latin Name.	Common Name.	Part used.	Powder No.
Hippocastanum, . . . .	Horse Chestnut, . . . .	Bark, . . . .	40
Hydrangea arborescens, . . . .	Hydrangea, Seven B'ks	Root, . . . .	50
Hyssopus, . . . . .	Hysop (Am., Eur'p'an)	Plant, . . . .	30
Hypericum perforatum, . . . .	Johnswort, . . . . .	Herb, . . . .	30
Ilex Paraguayensis, . . . .	Paraguay Tea, . . . .	Leaves, . . . .	30
Jeffersonia diphylla, . . . .	Twin Leaf, . . . . .	Root, . . . .	40
Jacaranda Caroba, . . . .	Caroba, . . . . .	Leaves, . . . .	40
Juglans nigra, . . . . .	Black Walnut, . . . .	Bark, . . . .	40
Juglans regia, . . . . .	European Butternut, . . . .	Leaves, . . . .	30
Kalmia latifolia, . . . . .	Mountain Laurel, . . . .	Leaves, . . . .	30
Lactuca virosa, . . . . .	Wild Lettuce, . . . . .	Leaves, . . . .	30
Lappæ fructus, . . . . .	Burdock Seed, . . . .	Fruit, . . . .	40
Lappæ radix, . . . . .	Burdock Root, . . . .	Root, . . . .	40
Larix Americana, . . . . .	Tamarack, . . . . .	Bark, . . . .	40
Lavendula vera, . . . . .	Lavender, . . . . .	Flowers, . . . .	30
Leonoria cardiaca, . . . . .	Motherwort, . . . . .	Herb, . . . .	30
Limonis cortex, . . . . .	Lemon Peel, . . . . .	Fruit rind, . . . .	20
Liatris odoratissima, . . . .	Vanilla Plant, . . . . .	Leaves, . . . .	30
Liatris spicata, . . . . .	Button Snakeroot, . . . .	Root, . . . .	50
Liatris squarrosa, . . . . .	Blazing Star, . . . . .	Root, . . . .	50
*Lycopus Europæus, . . . .	Bitter Bugle, . . . . .	Herb, . . . .	30
Lycopus Virginicus, . . . .	Bugle Weed, . . . . .	Herb, . . . .	30
Maltum, . . . . .	Barley Malt, . . . . .	Malted Seed . . . .	30
Malva sylvestris, . . . . .	Common Mallow, . . . .	Leaves, . . . .	20
Mangifera Indica, . . . . .	Mango, . . . . .	Bark, rind, . . . .	30
Mangostana, . . . . .	Mangosteen, . . . . .	Fruit rind, . . . .	30
Marjorana (Origanum M.)	Sweet Marjoram, . . . .	Herb, . . . .	30
Marrubium vulgare, . . . .	Hoarhound, . . . . .	Herb, . . . .	30
Marunta cotula, . . . . .	May Weed, . . . . .	Herb, . . . .	30
Melissa, . . . . .	Sweet Balm, . . . . .	Herb, . . . .	30
Melilotus officinalis, . . . .	Melilot, Sweet Clover, . . . .	Flowers, . . . .	30
Mentha piperita, . . . . .	Peppermint, . . . . .	Herb, . . . .	30
Mentha viridis, . . . . .	Spearmint, . . . . .	Herb, . . . .	30
Menyanthes trifoliata, . . . .	Buck Bean, Bog Bean, . . . .	Leaves, . . . .	30
Mikania Guaco, . . . . .	Guaco Leaves, . . . . .	Leaves, . . . .	30
Mithella repens, . . . . .	Partridgeberry, . . . .	Herb, . . . .	30
Morus nigra, . . . . .	Mulberry, . . . . .	Root, . . . .	40
Myrica Gale, . . . . .	Sweet Gale, . . . . .	Herb, . . . .	30
*Oenothera biennis, . . . .	Evening Primrose, . . . .	Twigs, leaves, . . . .	40
Osmarrhiza longistylis, . . . .	Sweet Cicely, . . . . .	Root, . . . .	40
Osmunda regalis, . . . . .	Buckhorn Brake, . . . .	Root, . . . .	40
Ostrya Virginica, . . . . .	Ironwood, . . . . .	Bark, . . . .	40
Oxydendron arboreum, . . . .	Sourwood, . . . . .	Twigs, . . . .	30
Panax (Aralia quiquefolia)	Ginseng, . . . . .	Root, . . . .	30
Papaver Soniniferum, . . . .	Poppy, . . . . .	Cap., leaves, . . . .	50
Pepo (Cucurbita P.) . . . .	Pumpkin, . . . . .	Seed, . . . .	20
Persia gratissima, . . . . .	Alligator Pear, . . . .	Seed, . . . .	40
Petroselinum, . . . . .	Parsley, . . . . .	Root, seed, . . . .	30
Pinus Strobis, . . . . .	White Pine, . . . . .	Inner bark, . . . .	40
Phoradendron, . . . . .	American Mistletoe, . . . .	Plant, . . . .	30
Plantago major, . . . . .	Common Plantain, . . . .	Plant, . . . .	30
Pinus Canadensis, . . . . .	Hemlock, . . . . .	Inner bark, . . . .	30
Polygala amara, . . . . .	Bitter Polygala, . . . .	Plant, . . . .	30
Polypodium vulgare, . . . .	Polypody, . . . . .	Root, . . . .	40

Latin Name.	Common Name.	Part used.	Powder No.
Polytrichum, . . . . .	Hair Cap Moss, . . . . .	Plant, . . . . .	30
Prinos verticillatus, . . . . .	Black Alder, . . . . .	Bark, . . . . .	40
Pulmonaria, . . . . .	Lungwort, . . . . .	Herb, . . . . .	30
Pyrethum Parthenum, . . . . .	Feverfew, . . . . .	Herb, . . . . .	30
Pyrola rotundifolia, . . . . .	Canker Lettuce, . . . . .	Herb, . . . . .	30
Pyrus Malus, . . . . .	Apple Tree, . . . . .	Root bark, . . . . .	40
Quercus alba, . . . . .	White Oak, . . . . .	Bark, . . . . .	40
Rhamnus catharticus, . . . . .	Buckthorn, . . . . .	Berries, . . . . .	20
Rhamnus Prushiana, . . . . .	Cascara Sag. Chittem, . . . . .	Bark, . . . . .	40
Rheas (Papaver R.) . . . . .	Red Poppy, . . . . .	Flowers, . . . . .	30
Ricini folia, . . . . .	Caster Oil Leaves, . . . . .	Leaves, . . . . .	30
Rubus strigosus, . . . . .	Red Raspberry, . . . . .	Leaves, . . . . .	30
Rubia, . . . . .	Madder, . . . . .	Root, . . . . .	30
Rudbeckia, . . . . .	Thimbleweed, . . . . .	Tops, . . . . .	30
Ruta graveolens, . . . . .	Rue, . . . . .	Leaves, . . . . .	30
Sabbatia angularis, . . . . .	Am. or Red Centaury, . . . . .	Plant, . . . . .	30
Sabbatia Elliottii, . . . . .	Quininc Flower, . . . . .	Herb, . . . . .	30
Salvia officinalis, . . . . .	Sage, . . . . .	Leaves, . . . . .	30
Sambucus Canadensis, . . . . .	Elder, . . . . .	Bark, flow'rs . . . . .	30
Sarracenia purpurea, . . . . .	Pitcher Plant, . . . . .	Plant, . . . . .	30
Scrofularia nodosa, . . . . .	Carpenter's Square, . . . . .	Root, . . . . .	30
*Senecio gracilis, . . . . .	Life Root, . . . . .	Plant, . . . . .	30
Simaruba officinalis, . . . . .	Simaruba, . . . . .	Bark, . . . . .	30
Smilax Sarsaparilla, . . . . .	Bamboo Brier, . . . . .	Root, . . . . .	30
Solidago odora, . . . . .	Golden Rod, . . . . .	Herb, . . . . .	30
Spiræa tomentosa, . . . . .	Hardhack, . . . . .	Herb, . . . . .	30
Statice Caroliniana, . . . . .	Marsh Rosemary, . . . . .	Root, . . . . .	40
Stigmata Maydis, . . . . .	Corn Silk, . . . . .	Stigmas, . . . . .	20
Symphytum officinale, . . . . .	Comfrey, . . . . .	Root, . . . . .	30
Tabacum, (Nicotiana T.) . . . . .	Tobacco, . . . . .	Leaf, . . . . .	30
Tanacetum vulgare, . . . . .	Tansy, . . . . .	Herb, . . . . .	30
Tecoma radicans, . . . . .	Trumpet Creeper, . . . . .	Bark, . . . . .	40
Thea Chinensis, . . . . .	Tea, . . . . .	Leaves, . . . . .	30
Theobroma Cacao, . . . . .	Chocolate, . . . . .	Seeds, . . . . .	40
Thymus Vulgaris, . . . . .	Thyme, . . . . .	Herb, . . . . .	30
Trifolium partense, . . . . .	Red Clover, . . . . .	Flowers, . . . . .	30
Triosteum perfoliatum, . . . . .	Fever Wort, . . . . .	Herb, . . . . .	30
Tilia, . . . . .	Linden, . . . . .	Flowers, . . . . .	30
Tonga, . . . . .	Mixed Fiji Island, . . . . .	Bark, . . . . .	50
Tormentilla, . . . . .	Tormentil, . . . . .	Rhizome, . . . . .	30
Tussilago Farfara, . . . . .	Coltsfoot, . . . . .	Leaves, . . . . .	40
Ulmus fulva, . . . . .	Slippery Elm, . . . . .	Bark, . . . . .	30
Umbellaria, . . . . .	California Laurel, . . . . .	Leaves, . . . . .	30
Urtica dioica, . . . . .	Nettle, . . . . .	Root, . . . . .	40
Ustilago Maydis, . . . . .	Corn Smut or Ergot, . . . . .	Fungus, . . . . .	50
Verbascum thapsus, . . . . .	Mullein, . . . . .	Fl'rs, leaves, . . . . .	30
Verbena hastata, . . . . .	Vervain, . . . . .	Herb, . . . . .	30
Viburnum dentatum, . . . . .	Arrow Wood, . . . . .	Bark, . . . . .	40
Viola tricolor, . . . . .	Wild Violet or Pansy, . . . . .	Plant, . . . . .	30
Viscum Album, . . . . .	Mistletoe, . . . . .	Plant, . . . . .	30
Vaccinum Crassifolium, . . . . .	Creeping Huckleberry, . . . . .	Plant, . . . . .	30

## FEL BOVIS.

*Ox Gall.*

This is first introduced as an officinal, in the present revision, although it has always been standard stock with druggists.

*Fel Bovis Inspissatum* is made by evaporating 100 parts of fresh Ox Gall at a temperature not exceeding 80° C. (176° F.) to fifteen parts. The liquid should be strained after it is first heated.

*Fel Bovis Purificatum* is made by evaporating 3 parts of fresh Ox Gall to 1 part, adding to it 1 part of Alcohol, agitating, and setting aside for twenty-four hours. The clear solution is then to be decanted, the remainder filtered and added to it, the Alcohol distilled off and the residue evaporated to a pilular consistence.

This is used chiefly in making pills.

## FEL BOVIS PREPARATUS.

*Prepared Ox Gall.*

The most use that druggists (especially those in the country) have for Ox Gall is in liniments. As the Pharmacopœia fails to provide such a preparation that will keep permanently, the following is given.

Ox Gall, fresh,	1 pint.
Alcohol,	5 fluidounces.

Evaporate the Ox Gall at a temperature not exceeding 80° C. (176° F.) to 12 fluidounces, add the Alcohol, allow to stand twenty-four hours, decant the clear liquid, filter the remainder and add to it.

This is the same strength as the normal Ox Gall and will keep perfectly.

## FERRUM — IRON.

A number of changes have been made in the Iron Salts, both in the manner of making and composition. The following have been added or omitted in the 1880 revision.

Added.	Omitted.
Ferri Carbonas Saccharatus,	Ferri Ferrocyanidum,
“ Iodidum Saccharatum,	“ Subcarbonas,
“ Oxidum Hydratum cum Magnesia,	“ Sulphuretum,
“ Sulphas Præcipitatus,	
“ Valerianas.	

The following changes have been made in the formulæ, composition, etc., of the Iron preparations :

## FERRI CARBONAS SACCHARATUS.

*Saccharated Ferrous Carbonate.*

This is evidently introduced as a new preparation to take the place of the *Ferri Subcarbonas* of the old Pharmacopœia, which has been dismissed. If recently prepared it is far superior to the old precipitated Carbonate of Iron, as that is entirely insoluble. It is a greenish gray powder, only partly soluble in water; but completely soluble in diluted hydrochloric acid, with evolution of Carbonic Acid gas. It contains about 15 per cent. of Ferrous Carbonate.

SACCHARATED OXIDE OF IRON (*Saccharatum Ferruginum*) is a combination of sugar and ferric oxide. It is soluble and has a sweet (non-ferruginous) taste. It is made, according to Siebert, by dissolving two parts of fine iron wire in twenty-four parts of nitric acid, sp. gr. 1.2, filtering, and then evaporating the filtrate to fifteen parts. When cool, twelve parts of Sugar are dissolved in the filtrate, and an excess of twelve parts of Sugar in twelve parts of 20 per cent. Water of Ammonia is added. After setting aside for twenty-four hours, this is precipitated with four or five times its volume of strong Alcohol; the precipitate is then collected, drained, and pressed between blotting paper, and then mixed with its own weight of powdered Sugar and dried by a moderate heat. It is considerably used by German physicians and is probably much better than the Saccharated Carbonate of Iron. It is a good antidote for arsenic.

## FERRI CHLORIDUM.

*Ferric Chloride.*

The proportion of the ingredients and the process for making is slightly changed in the new authority, a better working formula being given than in the 1870 revision.

## FERRI ET QUININÆ CITRAS.

*Citrate of Iron and Quinine.*

The 1880 Pharmacopœia directs this to be prepared from Citrate of Iron, in scales, and the alkaloid Quinine, in the proportion of 88 parts of the former to 12 parts of the latter. This makes a certain standard of 12 per cent. of Quinine in the preparation, while, as it has been formerly prepared, with the solution of Citrate of Iron and Sulphate of Quinine, the proportions were liable to vary.

## FERRI FERROCYANIDUM.

*Prussian Blue.*

Which was officinal in the 1870 revision has been dismissed.

## FERRI OXIDUM HYDRATUM CUM MAGNESIA.

*Hydrated Oxide of Iron with Magnesia.*

This, or rather these, preparations (for they are not combined until ready to be used), are to be kept on hand ready to use in case of arsenical poisoning. They are prepared as follows: No. 1, Mix 1,000 grains of solution of Tersulphate of Iron with 2,000 grains of Water and keep in a well-stopped bottle. No. 2, Rub 150 grains of Magnesia (Calcined Magnesia) with 2 pints of Water and keep in a well-stopped bottle.

When wanted for use mix the two preparations by adding the Magnesia mixture gradually to the Iron solution and shaking them together. Thus a freshly precipitated Hydrated Oxide of Iron is always at hand.

## FERRI PHOSPHAS.

*Ferric Phosphate.*

This is made in the new revision from Citrate, instead of Sulphate, of Iron, and is made into scales instead of a precipitated powder, as formerly directed. The preparation as now made is entirely dissimilar to the old Phosphate of Iron. It is in thin, bright green, transparent scales, perfectly soluble in water, while the old preparation (Ferrous Phosphate) is a dark gray powder insoluble in water.

## FERRI PYROPHOSPHAS.

*Ferric Pyrophosphate.*

This preparation is also made in an entirely different manner than before. The directions for making are much more simple and definite than in the 1870 revision, and the resultant preparation equally as good.

## FERRI SULPHAS PRÆCIPITATUS.

*Precipitated Ferrous Sulphate.*

This is a new form of Iron Sulphate, which has yet to prove its utility and value.

## FERRI VALERIANAS.

*Ferric Valerianate.*

This preparation of Iron is newly made officinal, although it has been furnished by manufacturing chemists for many years.

## GLYCERITA — GLYCERITES.

Five Glycerites were officinal in the 1870 Pharmacopœia; these have all been dismissed in the 1880 revision, and two new ones inserted. The glycerites of 1870 were in fact unnecessary preparations, as they were simply solutions of various substances in glycerin, requiring no special manipulation. The *Glycerite of Starch* of the present revision is almost identical with the formula published some years ago in THE FORMULARY as an excipient for pills. The *Glycerite of Yolk of Egg* (Glyconin) has been in use for a long time in making emulsions, etc.

For druggists' convenience a synopsis of the 1870 and 1880 glycerites is given.

## 1870.

GLYCERITUM ACIDI CARBOLICI. <i>Glycerite of Carbolic Acid.</i>	{ Carbolic Acid, 2 tr.ounces. Glycerin, $\frac{1}{2}$ pint. Rub together in a mortar.
GLYCERITUM ACIDI GALLICI. <i>Glycerite of Gallic Acid.</i>	{ Gallic Acid, 2 tr.ounces. Glycerin, $\frac{1}{2}$ pint. Rub together and dissolve by heat
GLYCERITUM ACIDI TANNICI. <i>Glycerite of Tannic Acid.</i>	{ Tannic Acid, 2 tr.ounces. Glycerin, $\frac{1}{2}$ pint. Rub together and dissolve by heat.
GLYCERITUM PICIS LIQUIDÆ. <i>Glycerite of Tar.</i>	{ Tar, 1 tr. ounce. Carb. Magnesium, 2 tr.ounces. Glycerin, 4 fl.ounces. Alcohol, 2 fl.ounces. Water, 10 fl.ounces. Make as directed.
GLYCERITUM SODII BORATIS. <i>Glycerite of Borax.</i>	{ Borate of Sodium, 2 tr.ounces. Glycerin, $\frac{1}{2}$ pint.

## 1880.

GLYCERITUM AMYLI. <i>Glycerite of Starch.</i>	{ Starch, 1 part. Glycerin (by weight), 9 parts. Rub together, then heat to 140° C. (284° F.), stirring constantly until uniformly gelatinous.
GLYCERITUM VITELLI. <i>Glyconin.</i>	{ Yolk of Egg, fresh, 4½ parts. Glycerin, 5½ parts. Rub together.

## GLYCYRRHIZINUM AMMONIATUM. U. S. 1880.

*Ammoniated Glycyrrhizin.*

(MADE BY WATER-BATH PERCOLATION.)

Liquorice Root, in No. 20 powder,      16 ounces.  
 Water,  
 Water of Ammonia,  
 Sulphuric Acid, each, a sufficient quantity.

Mix one ounce of Water of Ammonia with a pint of water and moisten the drug with 6 ounces of the mixture; pack moderately in the water-bath percolator, and, having poured the remainder of the mixed water and Ammonia upon it, cover it closely and set in a warm place for one day; then heat very moderately, and after one hour begin to percolate, adding water to the drug and continuing the percolation and heat until two pints have passed, or until the drug is exhausted. Add to the percolate slowly (stirring at the same time) Sulphuric Acid, so long as a precipitate is produced; collect this on a strainer, wash it and redissolve in water with the aid of Water of Ammonia, filter if necessary, and again add Sulphuric Acid so long as a precipitate is formed. Collect again on a strainer, wash with cold water as before, and dissolve with just sufficient Water of Ammonia diluted with an equal quantity of water.

Finally, pour on plates of glass and set in a warm place to evaporate. The product is in scales. It is used chiefly in solution for masking the taste of disagreeable or bitter medicines.

## HYDRARGYRUM—MERCURY.

No changes of any importance have been made in preparations of mercury. The following changes in names will be noted:

1870.	1880.
Hydrargyri Sulphas Flava.	Hydrargyri Subsulphas Flavus.
“ Sulphuretum Rubrum.	“ Sulphidum Rubrum.



## INFUSA — INFUSIONS.

Of the thirty-one Infusions that were officinal in the 1870 Pharmacopœia, but three are left to tell the tale,—two new ones have been added to keep them company, so that the Infusions of the 1880 Pharmacopœia now number five. They have had to give way to the superior and more convenient preparations of modern pharmacy, and they leave but a few old-time doctors to mourn their loss.

It is evident from the nature of Infusions that the water-bath percolator is the most convenient vessel in which to make them; therefore, the formulæ for making them will be given only by this process, the strength corresponding to the present officinal standard.

## GENERAL FORMULA FOR INFUSIONS.

*By Water-bath Percolation.*

This formula may be used for making all Infusions which may be prescribed or directed, except those for which formulæ are given.

The substance, coarsely ground, 1 part or ounce.

Water, sufficient to make 10 parts or ounces.

Having adjusted the perforated diaphragm or strainer in the bottom of a small-sized water-bath percolator, put the substance in the percolator and pour the water upon it. Cover the percolator closely with the cover, and having filled the vessel surrounding the percolator two-thirds full of water, heat to boiling, continue the heat moderately for half an hour and draw off the liquid by the stop-cock, adding enough water through the percolator to make 10 parts of the preparation.

## INFUSUM BRAYERÆ. U. S. 1880.

*Infusion of Brayera (Kousso).*

Brayera, in No. 20 powder, 6 parts.

Boiling Water, 100 parts.

“Pour the boiling water upon the Brayera and let it macerate in a covered vessel until cool.”

This is to be dispensed, powder and all.

## INFUSUM CINCHONÆ. U. S. 1880.

*Infusion of Cinchona.*

Cinchona, in No. 40 powder,	6 parts.
Aromatic Sulphuric Acid,	1 part.
Water, enough to make	100 parts.

“Mix the Acid with 50 parts of Water and moisten the powder with 3 parts of the mixture; pack it firmly in a conical glass percolator and gradually pour upon it, first, the remainder of the mixture, and afterward, water until the Infusion weighs 100 parts.”

## INFUSUM DIGITALIS.

*Infusion of Digitalis.*

1870.		1880.	
Digitalis,	60 grs.	Digitalis,	3 parts.
Tinct. Cinnamon,	1 fl.oz.	Cinnamon,	3 parts.
Boiling Water,	½ pint.	Boiling Water,	185 parts.
		Alcohol,	15 parts.
		Water, sufficient.	

“Macerate the Digitalis in the water for two hours in a covered vessel and strain; then add the Tincture of Cinnamon and mix.”

“Pour the Boiling Water upon the mixed powders and macerate for two hours in a covered vessel. Then strain, add the Alcohol, and pass enough water through the strainer to make the Infusion weigh 200 parts.”

## INFUSUM PRUNI VIRGINIANÆ.

*Infusion of Wild Cherry.*

	1870.	1880.
Wild Cherry, in No. 40 powder,	240 grains.	307 grains.
Water, sufficient to make	a pint.	a pint.

Moisten the powder with six fluidrachms of water and macerate for one hour; then pack firmly in a conical glass percolator, and gradually pour water upon it until a pint of the Infusion is obtained.

This Infusion is made with cold water because the heat of boiling water volatilizes the Hydrocyanic Acid, to which its flavor and value is due.

## INFUSUM SENNÆ COMPOSITUM. U. S. 1880.

*Compound Infusion of Senna. Black Draught.*

Senna,	6 parts.
Manna,	12 parts.
Sulphate of Magnesium,	12 parts.
Fennel, bruised,	2 parts.
Boiling Water,	100 parts.
Water, a sufficient quantity.	

Pour the Boiling Water upon the solid ingredients and macerate in a covered vessel until cool. Then strain and add enough Water, through the strainer, to make the Infusion weigh 100 parts.

## LINIMENTA—LINIMENTS.

The Liniments of the 1880 Pharmacopœia are but little changed from those of the 1870 revision, the chief change being the substitution of Cotton Seed Oil for Olive Oil in some of the preparations. The wisdom of this change remains yet to be proven. It at least has the advantage of being cheaper, and if it is as good for the purpose this is a consideration. Cotton Seed Oil is also known as Union Salad Oil.

The following Liniments have been added and omitted.

ADDED.	OMITTED.
Linimentum Belladonnæ,	Linimentum Aconiti.
Linimentum Sinapis Compositum.	

## LINIMENTUM ACONITI. U. S. 1870.

*Aconite Liniment.*

This preparation is very properly dismissed from the Liniments, as it possesses none of the characteristics of such preparations.

## LINIMENTUM AMMONIÆ.

*Ammonia Liniment—Volatile Liniment.*

1870.	1880.
Water of Ammonia, 3 fl.oz.	Water of Ammonia by weight, 3 oz.
Olive Oil, 6 tr.oz.	Cotton Seed Oil by weight, 7 oz.
Mix them.	Mix them.

## LINIMENTUM BELLADONNÆ.

*Belladonna Liniment.*

U. S. 1880.

Fluid Extract Belladonna (root),	95 parts.
Camphor,	5 parts.

“Dissolve the Camphor in the Fluid Extract.”

## LINIMENTUM CALCIS.

*Lime Liniment.*

1870.

Solution of Lime (Lime	
Water),	8 fl.oz.
Olive Oil,	7 tr.oz.
Mix them.	

1880.

Solution of Lime (Lime	
Water),	
Cotton Seed Oil, each,	50 parts.
(Or equal quantities by	
weight.)	
Mix them.	

This Liniment is also popularly called *Carron Oil*, deriving this name from the Carron Iron Works, Scotland, where it was extensively used for burns.

## LINIMENTUM CAMPHORÆ.

*Camphor Liniment—Camphorated Oil.*

1870.

By Weight.

Camphor,	3 ounces.
Olive Oil,	12 ounces.

1880.

By Weight.

Camphor,	3 ounces.
Cotton-seed Oil,	12 ounces.

Dissolve the Camphor in the Oil. This Liniment is more commonly known as *Camphorated Oil*, by which name it is usually sold to the general trade.

LINIMENTUM CAMPHORÆ COMPOSITUM, *Br.**Compound Camphor Liniment.*

Camphor,	2½ ounces avoird.
Oil of Lavender,	1 fluidrachm.
Stronger Water of Ammonia,	4¾ fluidounces.
Rectified Spirit,	14½ fluidounces.

“Dissolve the Camphor and Oil of Lavender in the

spirit; then add the Ammonia gradually, shaking them together until a clear solution is formed."

This Liniment must not be confounded with the Camphorated Soap Liniment of the U. S. Pharmacopœia. Physicians often write Lin. Camp. Comp., meaning the U. S. Soap Liniment. They should be advised on this point.

## LINIMENTUM CANTHARIDIS.

### *Cantharides Liniment. Blistering Liquid.*

The 1870 and 1880 preparations are almost identical. The preparation is much better

MADE BY WATER-BATH PERCOLATION.

Cantharides, in No. 60 powder, 960 grains, Oil of Turpentine, sufficient to make a pint. Having covered the perforated diaphragm of the water-bath percolator with burlap or coarse cotton cloth, moisten the Cantharides with an ounce of the Oil of Turpentine and pack it carefully in the percolator, pour upon it a pint of the Oil of Turpentine and, having covered the percolator closely, heat moderately by means of the water-bath for three hours; then remove from the fire and percolate, adding enough Oil of Turpentine through the percolator if necessary to make a pint of the Liniment.

## LINIMENTUM CHLOROFORMI.

### *Chloroform Liniment.*

1870.		1880.	
By Weight.		By Weight.	
Purified Chloroform,	3 oz.	Commere'l Chloroform,	3 oz.
Olive Oil,	4 oz.	Soap Liniment,	4½ oz.
Mix them.		Mix them.	

The substitution of Soap Liniment for Olive Oil in this preparation is a great improvement. It was suggested long ago in THE FORMULARY.

## LINIMENTUM CROTONIS, *Br.*

### *Croton Oil Liniment.*

Croton Oil,	1 fluidounce.
Oil of Cajuput,	
Rectified Spirit, each,	3½ fluidounces.
Mix them.	

Although this preparation is not official in the U. S., it is probably used more in this country than many of our official Liniments.

Several other Liniments of the Br. Pharmacopœia, not official in the U. S., are sometimes used in this country. The Formulæ for them may be found in the U. S. Dispensatory.

### LINIMENTUM PLUMBI SUBACETATIS.

*Liniment of Subacetate of Lead.*

1870.		1880.	
By Weight.		By Weight.	
Olive Oil,	3 ounces.	Cotton Seed Oil,	3 ounces.
Solution Subacetate		Solution Subacetate	
of Lead,	2 ounces.	of Lead,	2 ounces.
Mix them.		Mix them.	

### LINIMENTUM SAPONIS.

*Soap Liniment. Liquid Opodeldoc.*

	1870.	1880.
White Castile Soap, in Shavings,	4 tr.ounces.	4 tr.ounces.
Camphor,	2 tr.ounces.	2 tr.ounces.
Oil Rosmary,	$\frac{1}{2}$ fl.ounce.	211 minims.
Alcohol,	32 fl.ounces.	35 $\frac{7}{8}$ fl.ounces.
Water,	6 fl.ounces.	6 fl.ounces.

“Digest the Soap in the water until it is dissolved; dissolve the Camphor and Oil in the Alcohol; mix the solutions and filter through paper.”

Soap Liniment, as made by either of the above formula will partially solidify unless the soap used was quite fresh, or green; the reason of this is, that the preparation has not enough water in it. The following formula is therefore given:

#### IMPROVED FORMULA.

White Castile Soap, dry,	4 $\frac{1}{4}$ ounces avoird.
Camphor,	2 $\frac{1}{4}$ “ “
Oil Rosmary,	$\frac{1}{2}$ fluidounce.
Alcohol,	32 fluidounces.
Water,	8 fluidounces.

Digest the Soap in the water on a water-bath until dissolved; dissolve the Camphor and Oil in the Alcohol; then mix the solutions and filter.

If the Soap is green, 7 fluidounces of water is sufficient.

Soap Liniment made by this formula will never “chill.” If druggists have any Soap Liniment on hand which has solidified, it can usually be restored by warming until dissolved, then adding about an ounce of water to each pint and filtering.

## LINIMENTUM SINAPIS COMPOSITUM. U. S. 1880.

### *Compound Mustard Liniment.*

Volatile Oil of Mustard,	3 parts.
Extract of Mezereum,	2 parts.
Camphor,	6 parts.
Castor Oil,	15 parts.
Alcohol, sufficient to make	100 parts.

Dissolve the extract of Mezereum and the Camphor in seventy parts of Alcohol; then add the Oil of Mustard and the Castor Oil, and finally enough Alcohol to make the product weigh one hundred parts.

## LINIMENTUM TEREBINTHINÆ.

### *Liniment of Turpentine.*

The formulæ of the two revisions so nearly correspond that comparison is unnecessary. The proportions are very nearly as follows:

Resin Cerate,	13 ounces avoird.
Oil of Turpentine,	8 fluidounces.

Melt the Cerate, add the Oil and mix them thoroughly.

## LIQUORES—SOLUTIONS.

The solutions of the present Pharmacopœia are the same in number as those of the 1870 revision—four have been added, and four dismissed; they represent, mostly, aqueous, medicinal solutions, without sugar. Several changes have been made in the strength of the solutions in the new authority, which will be noted under the respective formulæ.

The following solutions have been added or dismissed.

ADDED.	OMITTED.
Liquor Ferri Acetatis.	Liquor Barii Chloridi.
Liquor Ferri et Quininae Citratæ.	Liquor Calcii Chloridi.
Liquor Pepsini,	Liquor Morphine Sulphatis.
Liquor Sodii Silicatis.	Liquor Potassii Permanganatis.



## LIQUOR ACIDI ARSENIOSI.

*Solution of Arsenious Acid, 1880.*

(Solution of Chloride of Arsenic, 1870.)

	1870.	1880.
Arsenious Acid, in small pieces,	64 grains.	73 grains.
Hydrochloric Acid,	2 fl.d'ms.	146 grains.
Distilled Water, sufficient to make,	1 pint.	1 pint.

Boil the Arsenious Acid with the Hydrochloric Acid and four ounces of Water, until it is dissolved. Filter the solution and add enough Distilled Water through the filter to make a pint.

The 1870 preparation contained one part of Arsenious Acid in about 120 parts of the solution; hence 5 minims, the usual dose, contained about  $\frac{1}{25}$  grain of the Arsenious Acid; the 1880 preparation contains 1 part of Arsenious Acid in 100 parts of the solution, hence 5 minims of it represents  $\frac{1}{20}$  grain of the Arsenious Acid. The new preparation being one-fifth stronger than the former.

## LIQUOR AMMONII ACETATIS.

*Solution Acetate of Ammonium. Spiritus Mindererus.*

This preparation is about a third stronger as made by the 1880 Pharmacopœia than formerly, because of the increase in the strength of Diluted Acetic Acid. As made by either authority it is simply Carbonate of Ammonium dissolved to saturation in Diluted Acetic Acid.

## LIQUOR ARSENI ET HYDRARGYRI IODIDI.

*Donovan's Solution.*

	1870.	1880.
Iodide of Arsenic,	70 grains.	73 grains.
Red Iodide of Mercury,	70 grains.	73 grains.
Distilled Water,	1 pint.	1 pint.

Triturate the Iodides with 3 ounces of Distilled Water until they are dissolved, filter the solution and add enough Distilled Water through the filter to make a pint.

## LIQUOR CALCIS.

*Solution of Lime. Lime Water.*

Solution of Lime, or Lime Water, is a saturated solution, containing about 0.15 per cent. of Hydrate of Calcium.

The 1880 formula is an improvement on the former, for the reason that a smaller quantity of Lime is used and the water first poured on is thrown away, thus removing impurities, etc. As only a very small quantity of Lime is dissolved it was unnecessary to use 4 ounces to the gallon as was formerly directed. The formula now stands about as follows:

Lime, unslacked,	$\frac{1}{2}$ ounce.
Water, sufficient to make	1 gallon.

Pour a few drops of water, at a time, upon the Lime until it has slacked, then add a pint of water and stir the Lime with it. After an hour, pour off the water and throw it away; then add one gallon of water to the sediment that remains, agitate, and after standing a day or two pour off for use.

### LIQUOR FERRI ACETATIS. U. S. 1880.

#### *Solution of Ferric Acetate.*

Solution Tersulphate of Iron,	100 parts, or $14\frac{1}{2}$ fl.ounces.
Glacial Acetic Acid,	26 parts, or $4\frac{3}{4}$ fl.ounces.
Water of Ammonia,	80 parts, or 16 fl.ounces.
Water,	
Distilled Water, each, a sufficient	
quantity to make	100 parts, or 1 pint.

Dilute 16 fluidounces of Water of Ammonia with 32 ounces of cold water, and  $14\frac{1}{2}$  fluidounces of the solution Tersulphate of Iron with 54 ounces of cold water. Put the Iron solution in a stone-ware crock or jar of, at least, the capacity of one gallon, and add the Ammonia solution to it, stirring constantly; fill the jar nearly full with cold water and agitate, then allow the precipitate to subside, draw off the supernatant fluid with a siphon, pour fresh water upon the precipitate, agitate, allow to subside, draw off the supernatant fluid as before, and so continue until the precipitate is thoroughly washed, and the washings give but a slight cloudiness with a test solution of Chloride of Barium. Then drain the precipitate on a wet muslin strainer, press out the water as much as possible, and dissolve it in a porcelain or glass vessel, with the  $4\frac{3}{4}$  fluidounces of Glacial Acetic Acid. Finally add enough Distilled Water to make the solution measure a pint, and filter if necessary.

This solution contains 33 per cent. of the anhydrous salt, Ferric Acetate.

NOTE.—The difference in the manner of washing the precipitate than is directed by the Pharmacopœia will be observed. The method here directed is more expeditious, exposes the Iron salt less to the atmosphere, and is less trouble than washing on a strainer.

## LIQUOR FERRI CHLORIDI.

*Solution of Chloride of Iron. (Ferric Chloride.)*

The 1880 formula differs a trifle from the 1870, and the resultant preparation has a higher specific gravity, being 1.405,\* while the 1870 preparation was but 1.355. A trifle less of Hydrochloric Acid is used in the latter formula than in the former, and the excess of Nitric Acid is driven off by heating the preparation until fumes of Nitric Acid are no longer observed. A trifle of Hydrochloric Acid is then added to make up for any loss of Acid strength. The 1880 preparation contains 37.8 per cent. of the anhydrous salt, Ferric Chloride.

## LIQUOR FERRI CITRATIS.

*Solution of Ferric Citrate.*

Solution Tersulphate of Iron,	105 parts, or $10\frac{1}{2}$ oz. av.
Citric Acid,	30 parts, or 3 oz. av.
Water of Ammonia,	84 parts, or $8\frac{1}{2}$ fl.oz.
Water, sufficient to make,	100 parts, or 10 oz. av.

Dilute  $8\frac{1}{2}$  fluidounces Water of Ammonia with 20 ounces of cold water; and  $10\frac{1}{2}$  ounces avoird. of solution Tersulphate of Iron with 6 pints of cold water. Put the Iron solution in a stone-ware jar of, at least, the capacity of one gallon, and add the Ammonia solution to it, stirring constantly; then allow the precipitate to subside, draw off the supernatant fluid with a siphon, pour enough fresh water upon the precipitate to nearly fill the jar, agitate, allow to subside, draw off the supernatant fluid as before and so continue until the precipitate is thoroughly washed, and the washings give but a slight cloudiness with a test solution of Chloride of Barium. Then drain the precipitate on a wet muslin strainer. When it has drained, place the moist precipitate in a porcelain dish, add the Citric Acid and heat the mixture on a water-bath to  $60^{\circ}$  C. ( $140^{\circ}$  F)., stirring constantly until the precipitate is dissolved. Lastly, filter the liquid and evaporate it by gentle heat to 10 ounces avoirdupois.

This solution contains about 35.5 per cent. of the anhydrous salt, Ferric Citrate.

\* Experiments show that the specific gravity claimed by the Pharmacopœia is higher than can be made by the formula, 1.390 being about as high as can be made by following the directions.

## LIQUOR FERRI ET QUININÆ CITRATIS.

U. S. 1880.

*Solution of Citrate of Iron and Quinine.*

Citrate of Iron and Ammonium,	65 parts,	or 568 grains.
Quinine (the Alkaloid), dried,	12 “	or 105 grains.
Citric Acid,	28 “	or 245 grains.
Alcohol,	30 “	or 6 fl.drachms.
Distilled Water, sufficient to make	200 “	or 4 ounces av.

“ Dissolve the Citrate of Iron and Ammonium in two hundred parts, or 4 fluidounces of Distilled Water, contained in a tared porcelain capsule. Heat the solution to 60° C. (140° F.) on a water-bath; add the Citric Acid and, when it is dissolved, add the Quinine, stirring the mixture until a perfect solution has been obtained. Evaporate this to 160 parts or 3 ounces av., allow it to cool, add the Alcohol, and, finally, enough Distilled Water to make the solution weigh 200 parts or 4 ounces av.”

A solution similar to this, although perhaps not *exactly* of the same composition, may be made by dissolving the Citrate of Iron and Quinine, scales, as purchased of the manufacturing chemists, in an equal weight of Distilled Water, by the aid of gentle heat.

## LIQUOR FERRI NITRATIS.

*Solution of Nitrate of Iron. (Ferric Nitrate.)*

1870.		1880.	
Iron Wire,	2½ tr.oz.	Sol. Tersulphate of	
Nitric Acid,	5 tr.oz.	Iron,	18 parts.
Distilled Water, sufficient.		Water of Ammonia,	15 parts.
		Nitric Acid,	7 parts.
		Distilled Water,	
		Water, each sufficient.	

For directions for making, see the Pharmacopœias.

The resultant preparations, as made by the two revisions, are not materially different.

The solution contains about 6 per cent. of the anhydrous salt, Ferric Nitrate.

## LIQUOR FERRI SUBSULPHATIS.

*Solution of Subsulphate or Persulphate of Iron.**(Monsef's Solution.)*

This solution is but little changed in the new revision. The formula of the present revision is essentially that of Dr. Squibb.

The solution contains 43.7 per cent. of Basic Sulphate of Iron.

## LIQUOR FERRI TERSULPHATIS.

*Solution of Tersulphate of Iron. (Normal Ferric Sulphate.)*

This solution is but slightly changed in the new revision. It contains 28.7 per cent. of the salt.

## LIQUOR GUTTA-PERCHÆ.

*Solution of Gutta-Percha.*

This solution is essentially the same in the 1880 as in the 1870 revision. The 1880 formula is as follows:

Gutta-Percha, in thin slices, 9 parts or 1 ounce av.

Commercial Chloroform, 91 parts or 6½ fl.ounces.

Carbonate of Lead, fine

powder,

10 parts or 1 ounce av.

“Add the Gutta-Percha to 70 parts or 5 fluidounces of the Chloroform contained in a bottle, cork it well and shake it occasionally until the Gutta-Percha is dissolved. Then add the Carbonate of Lead previously mixed with the remainder of the Chloroform, and, having several times shaken the whole together at intervals of half an hour, set the mixture aside until the insoluble matters are subsided and the solution has become perfectly clear. Lastly, decant the clear liquid and keep it in small, well stopped vials.”

Purified instead of Commercial Chloroform is used in the 1870 formula.

## LIQUOR HYDRARGYRI NITRATIS.

*Solution of Nitrate of Mercury. (Mercuric Nitrate.)*

The 1880 formula corresponds with one of the methods of making this preparation which was adopted in the former

revision, doing away with the disagreeable task of converting the metal into an oxide which was directed in one of its formulas. It now stands as follows :

Red Oxide of Mercury,	
(Red Precipitate),	40 parts, or 4 ounces, avoird.
Nitric Acid,	45 parts, or 3 fluidounces.
Distilled Water,	15 parts, or 1½ fluidounces.

Mix the Nitric Acid with the Water and dissolve the Red Precipitate in the mixture.

### LIQUOR IODI COMPOSITUS.

*Compound Solution of Iodine. (Lugol's Solution.)*

(Liquor Iodinii Compositus, U. S. 1870.)

	1870.	1880.
Iodine,	360 grains.	428 grains.
Iodide of Potassium,	720 grains.	857 grains.
Distilled Water,	a pint.	a pint.

Dissolve the Iodine and Iodide of Potassium in the Distilled Water.

### LIQUOR MAGNESII CITRATIS.

*Solution of Citrate of Magnesium.*

The 1880 preparation corresponds with the formula as heretofore published, except that only 30 grains of Bicarbonate of Potassium, instead of 40, are used.

The formula now stands as follows :

Carbonate of Magnesium,	200 grains.
Citric Acid,	400 grains.
Syrup of Citric Acid,	1200 grains.
Bicarbonate of Potassium,	30 grains.
Water, a sufficient quantity.	

Dissolve the Citric Acid in four ounces of Water ; rub the Carbonate of Magnesium through a sieve and add it in portions to the solution until it is all dissolved. Filter the solution and add to it enough Water, previously boiled and filtered, to make 8½ fluid ounces. Put the Syrup of Citric Acid in a strong 12-ounce bottle and drop the Crystals of Bicarbonate of Potassium in it, then carefully pour the solution of Magnesium in the bottle, by letting it run down the side, stop it tightly and tie the cork. This should not be

kept more than a week. The great difficulty in keeping this solution from decomposing, has suggested many methods by which it can be freshly prepared for the customer, but no very satisfactory one has yet been proposed.

## LIQUOR MORPHLÆ SULPHATIS. U. S. 1870.

*Solution Sulphate of Morphia. (1870.)*

Although this solution has been dismissed from the new revision of the Pharmacopœia, it will continue to be used and prescribed by physicians. The greatest difficulty with this solution was that it partially decomposed after standing a few days. It should therefore be freshly made when wanted.

Sulphate of Morphine,	1 grain.
Distilled Water,	1 ounce.

Dissolve the Morphine in the water.

*Liquor Morphicæ Acetatis* and *Liquor Morphicæ Hydrochloratis* are official in the British Pharmacopœia; they each contain 4 grains of the Morphine salt in a fluid ounce.

## LIQUOR PLUMBI SUBACETATIS.

*Solution Subacetate of Lead. (Goulard's Extract.)*

1870.

Acetate of Lead, 16 troyoz.  
Oxide of Lead, 9½ troyoz.  
Boiling Water, sufficient.

“Put the Acetate and Oxide into 4 pints of boiling water in a glass or porcelain vessel and boil for half an hour, occasionally adding boiling water to preserve the measure; then filter through paper. Lastly keep the liquid in a well-stopped bottle.”

1880.

Acetate of Lead, 17 parts.  
Oxide of Lead, 12 parts.  
Distilled Water, sufficient.

“Dissolve the Acetate of Lead in 80 parts of boiling Distilled Water in a glass or porcelain vessel; then add the Oxide of Lead and boil for half an hour, occasionally adding enough hot Distilled Water to make up the loss by evaporation. Remove the heat, allow the liquid to cool and add enough Distilled Water previously boiled and cooled to make the product weigh 100 parts. Finally filter the liquid in a well-covered funnel.”



It will be observed that the 1880 formula requires a larger proportion of the Oxide of Lead than the former. The 1880 preparation is slightly weaker than the former, the solution as made by the new authority containing about 25 per cent. of Subacetate of Lead.

## LIQUOR PEPSINI. U. S. 1880.

### *Solution of Pepsin—Liquid Pepsin.*

Saccharated Pepsin,	40 parts, or 200 grains.
Hydrochloric Acid,	12 parts, or 50 minims.
Glycerin,	400 parts, or 3½ fl.ounces.
Water,	548 parts, or 6 fl.ounces.

Mix the Acid with the water, and dissolve in it the Pepsin, add the Glycerin, let stand 24 hours and filter.

This is a new officinal similar to the unofficinal solutions of Pepsin that have been much used for the past few years.

## LIQUOR PLUMBI SUBACETATIS DILUTUS.

### *Diluted Solution of Subacetate of Lead. (Lead Water.)*

1870.	1880.
Solution Subacetate	Solution Subacetate
of Lead, 3 fluidrachms.	of Lead, 3 parts.
Distilled Water, a pint.	Distilled Water, 97 parts.
Mix them.	Mix them.

This solution is almost exactly the same as prepared by either formula. The 1880 revision directs the Distilled Water to be boiled and cooled before using, for the purpose of driving off Carbonic Acid, any trace of which produces a cloudiness in the preparation.

## LIQUOR POTASSÆ.

### *Solution of Potassa.*

This preparation as made by the new authority is not quite as strong as before. Few druggists will take the trouble to make the solution from Bicarbonate of Potassium and Lime, when it can be so readily made from Potassa (Caustic Potash). The following formula is here presented as making a

preparation almost identical in strength with the new standard.

Potassa (Caustic Potash), 1 ounce av.  
Distilled Water, enough to make a pint.

Dissolve the Potassa in the water. This solution contains about 5 per cent. of Hydrate of Potassium.

### LIQUOR POTASSII ARSEINITIS.

*Solution of Arsenite of Potassium. (Fowler's Solution.)*

	1870.	1880.
Arsenious Acid,	64 grains.	1 part.
Bicarbonate of Potassium,	64 grains.	1 part.
Compound Tinct. (Spirit) of Lavender,	$\frac{1}{2}$ fl.oz.	3 parts.
Distilled Water, enough to make	a pint.	100 parts.

“Boil the Arsenious Acid and Bicarbonate of Potassium in a glass vessel with 10 parts (or  $\frac{1}{2}$  ounce) of Distilled Water until the Acid is Completely dissolved, then add the Compound Tincture (Spirit) of Lavender and enough Distilled Water to make the product weigh 100 parts, or measure a pint.”—The 1880 preparation is slightly weaker than the former.

### LIQUOR POTASSII CITRATIS.

*Solution Citrate of Potassium.*

	1870.	1880.
Citric Acid,	240 grains.	6 parts.
Bicarbonate of Potassium,	330 grains.	8 parts.
Water,	$\frac{1}{2}$ pint.	sufficient to make 100 parts.

Dissolve the Citric Acid in the water and add the Bicarbonate of Potassium, when effervescence has ceased, filter. This preparation should be freshly made when wanted.

The most convenient way to make this preparation is to keep a solution of Citric Acid and Bicarbonate of Potassium separate, and combine them when wanted. For this purpose they may be prepared as follows:

Citric Acid,	462 grains.
Water, enough to make	$\frac{1}{2}$ pint.
Dissolve.	

Bicarbonate of Potassium,	618 grains.
Water, enough to make	$\frac{1}{2}$ pint.
Dissolve.	

When needed for use mix the two solutions in equal quantities.

## LIQUOR POTASSII PERMANGANATIS. U. S. 1870.

### *Solution of Permanganate of Potassium.*

This preparation, which was officinal in the 1870 revision, has been very properly dismissed. It was a simple solution of 64 grains of Permanganate of Potassium in a pint of Distilled Water.

## LIQUOR SODÆ.

### *Solution of Soda.*

Like the solution of Potassa, few druggists will prepare it from the Carbonate of Sodium and Lime, but will prefer the easier and fully as reliable method of preparing it from the Caustic Soda. Caustic Soda (Hydrate of Sodium, or Soda Bi Lime), may be obtained in sticks the same as Caustic Potash. The following formula makes the solution the same strength as the 1880 Pharmacopœia:

Soda (Hydrate) 98° (or in sticks),	1 ounce av.
Distilled Water, enough to make	a pint.

Dissolve the Soda in the Distilled Water. This solution contains about 5 per cent. of Hydrate of Sodium.

## LIQUOR SODÆ CHLORATÆ.

### *Solution of Chlorinated Soda. (Labarraque's Solution.)*

(Liquor Sodæ Chlorinatæ. U. S. 1870.)

	1870.	1880.
Chlorinated Lime,	24 tr.ounces.	25 ounces av.
Carbonate of Sodium,	12 tr.ounces.	20 ounces av.
Water, enough to make	11½ pints.	14 pints.

Mix the Chlorinated Lime intimately with six pints of Water in a tared (weighed) vessel, provided with a tightly-fitting cover. Dissolve the Carbonate of Sodium in six pints of boiling Water, and immediately pour the latter solution into the former. Cover the vessel tightly, and when the contents are cold add enough water to make the desired measure, strain through cotton, allow the precipitate to subside, and draw off the clear solution with a siphon.

It will be observed that a much larger proportion of Carbonate of Sodium is used in the 1880 than in the 1870 preparation, but the finished solution contains about the same amount of the combined ingredients in solution.

### LIQUOR SODII ARSENIATIS.

#### *Solution of Arseniate of Sodium.*

	1870.	1880.
Arseniate of Sodium, deprived of its Water of Crystalization by a heat not exceeding 149° C. (300° F.),	64 grains.	73 grains.
Distilled Water,	a pint.	a pint.

Dissolve the Arseniate of Sodium in the Distilled Water. The 1880 preparation contains 1 per cent., the 1870 contains 0.87 per cent. of the Arseniate of Sodium.

### LIQUOR STRYCHNINÆ.

#### *Solution of Strychnine.*

Although this solution is not official in the U. S. Pharmacopœia, the need of a standard Strychnine solution is often felt by druggists and physicians. For this reason the British solution is often prescribed in this country, although, on account of the British fluid measure not corresponding with our own, it is not the proper solution for American use. The British solution corresponds in strength to their solutions of Morphine, being 4 grains of Strychnine in a fluid ounce. Probably the solution of Strychnine best known to American druggists and physicians is Hall's solution, representing one grain of Strychnine in a fluid ounce. It is given here for convenient reference.

#### *Hall's Solution of Strychnine.*

Strychnine in crystals,	16 grains.
Alcohol } each,	7½ fl.ounces.
Water } each,	
Acetic Acid } each,	½ fl.ounce.
Spirit of Orange }	

Rub the Strychnine to a very fine powder and dissolve with the Acetic Acid mixed with the Alcohol; add the water and Spirit of Orange and, after standing 24 hours, filter.

## LIQUOR ZINCI CHLORIDI.

*Solution of Chloride of Zinc.*

	1870.	1880.
Zinc, granulated,	2880 grains.	2721 grains.
Nitric Acid,	150 grains.	136 grains.
Precipitated Carbonate of Zinc,	150 grains.	136 grains.
Hydrochloric Acid, } each, sufficient		
Distilled Water, } to make	a pint.	a pint.

To the zinc contained in a glass or porcelain vessel add, gradually, enough Hydrochloric Acid to dissolve it; then strain the solution, add the Nitric Acid, evaporate to dryness and bring the mass to fusion. Let it cool, dissolve it in  $2\frac{1}{2}$  ounces of Distilled Water, add the precipitated Carbonate of Zinc and agitate the mixture occasionally during 24 hours. Finally filter through white filter paper free from iron, and pass enough Distilled Water through the filter to make the solution measure a pint.

This solution contains about fifty per cent. of the Chloride of Zinc.

It may also be conveniently prepared as follows:

Chloride of Zinc,	1 ounce av.
Distilled Water,	1 fl.ounce.

Dissolve the Zinc Chloride in the Distilled Water.

## LITHIUM.

In the 1870 revision *Carbonate of Lithium* only was officinal, the present revision has increased the Lithium preparations to five, viz.: *Benzoate of Lithium*, *Bromide of Lithium*, *Carbonate of Lithium*, *Citrate of Lithium*, *Salicylate of Lithium*.

## MAGNESIA PONDEROSA.

*Heavy Magnesia* has been added to the list of officinals. It is popularly known in the market as Henry's Magnesia, Husband's Magnesia, etc.

## MAGNESII CITRAS GRANULATUS.

*Granulated Citrate of Magnesium.*

This is a new officinal, which, as made by manufacturing chemists, has had a large sale. As it is very easily prepared

and affords a large profit there is no reason why druggists should not make it themselves; the formula is as follows:

Carbonate of Magnesium,	2 $\frac{3}{4}$ ounces.
Citric Acid,	12 ounces.
Bi-carbonate of Sodium,	9 $\frac{1}{4}$ ounces.
Sugar, in No. 60 powder,	2 ounces.
Alcohol,	
Distilled Water, each, a sufficient quantity.	

“ Mix the Carbonate of Magnesium thoroughly with 8 $\frac{1}{4}$  ounces of Citric Acid and enough Distilled Water to make a thick paste; dry this at a temperature not exceeding 30° C. (86° F.) and reduce it to a fine powder, then mix it intimately with the Sugar and Bi-carbonate of Sodium, and the remaining 3 $\frac{3}{4}$  ounces of the Citric Acid previously reduced to a very fine powder. Dampen the mass with a sufficient quantity of Alcohol and rub it through a coarse (No. 20) tinned-iron sieve to form a coarse granulated powder. Lastly dry in a moderately warm place.”

### MASSÆ—MASSES.

Several preparations that have formerly been classed under Pills have now been, very properly, transferred to Masses.

They are as follows:

#### MASSA COPAIBÆ—1880.

##### PILULÆ COPAIBÆ—1870.

##### *Mass of Copaiba.*

Copaiba,	94 parts or 1 ounce av.
Magnesia, freshly calcined,	6 parts or 26 grains.

Mix them intimately and set the mixture aside until it concretes into a pilular mass.

#### MASSA FERRI CARBONATIS—1880.

##### PILULA FERRI CARBONATIS—1870.

##### *Mass of Carbonate of Iron. (Vallet's Mass.)*

	1870.	1880.
Sulphate of Iron,	8 ounces.	8 ounces.
Carbonate of Sodium,	9 ounces.	8 $\frac{3}{4}$ ounces.
Clarified Honey,	3 ounces.	3 ounces.
Sugar in coarse powder,	2 ounces.	2 ounces.
Syrup,		
Distilled Water, each,	sufficient.	sufficient.

Dissolve the Iron and Sodium separately, each in a pint of water, and filter the solutions. Dissolve the Iron in a pint of boiling Distilled Water, add 1 ounce of Syrup and filter. Dissolve the Sodium in a pint of water and filter. Put the Iron Solution in a quart bottle and mix the Sodium Solution with it. When the precipitate has subsided, pour off the supernatant liquid, and having mixed 1 part of Syrup with 16 parts of water, pour this upon the precipitate, agitate and again allow the precipitate to subside. Pour off the liquid as before and continue washing the precipitate in this manner until the washings no longer have a saline taste. Then drain the precipitate on a cloth strainer, press out as much of the water as possible and at once mix it with the Honey and Sugar and evaporate it by means of a water-bath until it weighs 8 ounces.

MASSA HYDRARGYRI—1880.

PILULÆ HYDRARGYRI—1870.

*Mass of Mercury, Blue Mass, Blue Pill.*

1870.	1880.
Mercury, 2 ounces. Confection of Rose, 3 ounces. Liquorice Root, 1 ounce.	Mercury, 950 grains. Liquorice, 144 grains. Althæa, 720 grains. Glycerin, 86 grains. Honey of Rose, 979 grains.
“Rub the Mercury with the confection until the globules cease to be visible; then add the Liquorice Root and beat the whole into a pilular mass.”	“Triturate the Mercury with the Honey of Rose and Glycerin until it is extinguished. Then gradually add the Liquorice and Althæa and continue the trituration until globules of Mercury cease to be visible under a lens magnifying ten diameters.”

MEL DESPUMATUM.

*Clarified Honey.*

The officinal directions is to heat the Honey by means of a water-bath, remove the scum, and strain.

Honey producers now have a process by which they draw the honey without breaking the comb; when obtained in this way it needs no clarifying, and is, in fact, better than clarified honey, because it is uninjured by heat.



## MEL ROSÆ.

*Honey of Rose.*

	1870.	1880.
Red Rose, in No. 40 powder,	2 ounces.	2 ounces.
Clarified Honey,	25 ounces.	23 ounces.
Diluted Alcohol,	sufficient.	sufficient.

Make as directed. See Pharmacopœia.

## MISTURÆ—MIXTURES.

Mixtures are, mostly, such preparations as are composed of insoluble substances held in suspension in watery fluids. Three new mixtures have been added to the list in the present Pharmacopœia.

## MISTURA AMMONIACI.

*Ammoniac Mixture.*

	1870.	1880.
Ammoniac,	120 grains.	144 grains.
Water,	8 fl.ounces.	8 fl.ounces.

Rub the Ammoniac with the water gradually added, until they are thoroughly mixed, and strain.

## MISTURA AMYGDALÆ.

*Almond Mixture.*

	1870.	1880.
Sweet Almond,	240 grains.	218 grains.
Acacia, in fine powder,	30 grains.	36 grains.
Sugar,	120 grains.	109 grains.
Distilled Water,	8 fl.ozs.	8 fl.ozs.

Blanch the Almonds and beat them with the Gum Arabic and Sugar in a mortar until mixed thoroughly; then rub the mixture with the Distilled Water and strain.

## MISTURA ASAFETIDÆ.

*Asafetida Mixture.*

	1870.	1880.
Asafetida,	120 grains.	144 grains.
Water,	8 fl.ozs.	8 fl.ozs.

Rub the Asafetida with the Water, gradually added, until they are thoroughly mixed, and strain.

## MISTURA CHLOROFORMI.

*Chloroform Mixture.*

	1870.	1880.
Purified Chloroform,	240 grains.	255 grains.
Camphor,	60 grains.	64 grains.
Fresh Yolk of Egg,	1 yolk.	318 grains.
Water,	6 fl.ozs.	6 fl.ozs.

Rub the yolk of Egg in a mortar, first by itself, then with the Camphor, previously dissolved in the Chloroform, and lastly, with the water, gradually added, so as to make a uniform mixture.

## MISTURA CRETÆ.

*Chalk Mixture.*

	1870.	1880.
Prepared Chalk,	240 grains.	Compound Chalk Powder
Glycerin,	$\frac{1}{2}$ fl.ounce.	(see Pulvures), 2 ounces.
Gum Arabic,	120 grains.	Cinnamon Water,
Cinnamon Water,		Water, each, 4 fl.ounces.
Water, each,	4 fl.ounces.	

Rub the Powder with the Cinnamon Water and Water, gradually added, and mix the whole together.

This should be freshly prepared when wanted for use, as it soon changes if kept in warm weather.

## MISTURA FERRI COMPOSITA.

*Compound Iron Mixture.* (Griffith's Mixture.)

	1870.	1880.
Sulphate of Iron,	20 grains.	24 grains.
Myrrh,	60 grains.	72 grains.
Sugar,	60 grains.	72 grains.
Carbonate of Potassium,	25 grains.	32 grains.
Spirit of Lavender,	$\frac{1}{2}$ fl.ounce.	$\frac{1}{2}$ fl.ounce.
Rose Water,	$7\frac{1}{2}$ fl.ounces.	8 fl.ounces.

“Rub the Myrrh, Sugar and Carbonate of Potassium with the Rose Water, gradually added; then with the Spirit of Lavender, and lastly the Sulphate of Iron. Pour the mixture immediately into a bottle and keep well stopped.”

# MISTURA FERRI ET AMMONII ACETATIS. U. S. 1880.

*Mixture of Acetate of Iron and Ammonium. (Basham's Mixture.)*

Tincture of Chloride of Iron,	2 parts.
Diluted Acetic Acid,	3 parts.
Solution of Acetate of Ammonium,	20 parts.
Elixir of Orange,	10 parts.
Syrup,	15 parts.
Water,	50 parts.

“To the Solution of Acetate of Ammonium previously mixed with the Diluted Acetic Acid, add the Tincture of Chloride of Iron, and afterwards the Elixir of Orange, Syrup and Water, and mix the whole thoroughly.”

## MISTURA GLYCYRRHIZÆ COMPOSITA.

*Compound Liquorice Mixture—Brown Mixture.*

	1870.	1880.
Extract Liquorice, powder (1870),	240 grains.	
Pure Extract Liquorice, powder (1880),		234 grains.
Sugar,	240 grains.	234 grains.
Acacia,	240 grains.	234 grains.
Camphorated Tincture Opium,	2 fl.ounces.	2 $\frac{1}{8}$ fl.oz.
Wine of Antimony,	1 fl.ounce.	1 fl.oz.
Spirit of Nitrous Ether,	$\frac{1}{2}$ fl.ounce.	$\frac{1}{2}$ fl.oz.
Water,	12 fl.ounces.	12 fl.oz.

“Rub the Extract of Liquorice, Sugar and Acacia with the water gradually added; then add the other ingredients and mix the whole thoroughly.”

## BROWN MIXTURE. IMPROVED.

The following formula is taken from FENNER'S FORMULARY. It is not claimed to be the same as the Compound Liquorice Mixture, but it has about the same composition and no sediment, the Glycyrrhizin being entirely soluble in the preparation:

Glycyrrhizin, ammoniated,	160 grains.
Acacia, in fine powder,	1 ounce av.
Tincture of Opium,	160 minims.
Wine of Antimony,	1 fl.ounce.
Spirit of Nitrous Ether,	$\frac{1}{2}$ fl.ounce.
Warm Water,	1 pint.

Dissolve the Glycyrrhizin in the warm Water and rub with the Acacia in a mortar. When cooled add the other ingredients and filter if necessary.

### MISTURA MAGNESIÆ ET ASAFETIDÆ.

*Mixture of Magnesia and Asafetida—Dewee's Carminative.*

1880.

Carbonate of Magnesium,	5 parts or 360 grains.
Tincture of Asafetida,	7 parts or 10 fluidrachms.
Tincture of Opium,	1 part or 75 minims.
Sugar,	10 parts or 1½ ounces av.
Distilled Water enough to make 100 parts or 16 fluid-ounces.	

Rub the Carbonate of Magnesium and Sugar in a mortar with the Tincture of Asafetida; add the Tincture of Opium and then the water gradually.

This is the old Dewee's Carminative at last made officinal. It is probably as vile a compound as could well be devised, yet it is considerably prescribed and used.

### MISTURA POTASSII CITRATIS.

*Mixture of Citrate of Potassium. (Neutral Mixture.)*

Fresh Lemon Juice, strained,	1 fluidounce.
Bicarbonate of Potassium sufficient (about 45 grains).	

Add Bicarbonate of Potassium gradually to the Lemon Juice until it is neutralized. This should be freshly made when wanted for use.

This preparation must not be confounded with Liquor Potassii Citratis, as it is much weaker than it.

### MISTURA RHEI ET SODÆ.

*Mixture of Rhubarb and Soda.*

1880.

Bicarbonate of Sodium,	1 ounce avoird.
Fluid Extract of Rhubarb,	¾ fluidounce.
Spirit of Peppermint,	1¼ fluidounces.
Water, enough to make	32 fluidounces.

Dissolve the Bicarbonate of Sodium in a pint of water add the Fluid Extract and Spirit, and then enough water to the mixture to make it measure 32 fluidounces.

MISTURA SENNÆ COMPOSITA, *Br.**Compound Mixture of Senna.*

This is the British officinal commonly known as *Black Draught*. It is represented in the U. S. Pharmacopœia by the formula Infusum Sennæ Compositum, which is more easily prepared and quite as efficient.

## MORPHINA — MORPHINE.

Notice the difference in spelling which was in the 1870 revision, *Morphia* (Latin feminine), both in the Latin and English. The change in orthography is, of course, carried through all of the Salts of the Alkaloid.

## MUCILAGINES — MUCILAGES.

Mucilages are solutions of gums or other substances which produce mucilage, in water. They are used chiefly as a vehicle for administering or suspending medicines; for making emulsions, etc. The 1880 Pharmacopœia has added Mucilage of Quince Seed to the officinal list. The changes in the other preparations, although unimportant, are as follows:

## MUCILAGO ACACIÆ.

*Mucilage of Acacia.*

	1870.	1880.
Acacia in small fragments,	4 tr. ounces.	4 $\frac{1}{6}$ ounces av.
Water,	8 fl. ounces.	8 fl. ounces.

Wash the Acacia with cold water, then add the water to it, agitate occasionally until dissolved and strain.

Granulated Acacia is the best to use in making the mucilage.

## MUCILAGO CYDONII.

*Mucilage of Quince Seed.*

	1880.	
Quince Seed,		75 grains.
Distilled Water,		8 fl. ounces.

“Macerate the Quince Seed for half an hour in a covered vessel with the Distilled Water, frequently agitating. Then drain the liquid through muslin without pressure.”

This should be prepared when wanted for use.

### MUCILAGO SASSAFRAS MEDULLÆ.

#### *Mucilage of Sassafras Pith.*

	1870.	1880.
Sassafras Pith,	60 grains.	75 grains.
Water,	8 fl.ounces.	8 fl.ounces.

Macerate for two hours and strain.

### MUCILAGO TRAGACANTHÆ.

#### *Mucilage of Tragacanth.*

	1870.		1880.
Tragacanth,	480 grains.	Tragacanth,	464 grains.
Boiling Water,	16 fl.ounces.	Glycerin,	3½ oz. av.
		Water,	13 fl.ounces.

“Macerate the Tragacanth with the water for 24 hours, occasionally stirring; then beat the mixture so as to render it of uniform consistence and strain forcibly through muslin.”

Mix the Glycerin with the Water and heat to boiling, add the Tragacanth and let it macerate for 24 hours, stirring occasionally; then beat to a uniform consistence and strain forcibly through muslin.

### MUCILAGO ULMI.

#### *Mucilage of Elm.*

	1870.	1880.
Elm, sliced,	a tr.ounce.	438 grains.
Boiling Water,	a pint.	a pint.

Macerate for two hours in a covered vessel and strain.

### OLEATA — OLEATES.

Oleates have come into vogue as galenicals within the past ten years. They are simply solutions of metallic bases or vegetable alkaloids in an excess of Oleic Acid, and are made

by triturating the substance with the Oleic Acid until dissolved, gentle heat being sometimes required to effect the solution. The Oleates have some advantages over other preparations for external use, but they have yet to be more thoroughly tested before a true estimate of their value can be obtained.

The Oleates of the metals are made by certain manufacturing chemists by precipitating solutions of their soluble salts with soluble Oleates. The precipitated Oleate, in the proper proportion, is then dissolved in Oleic Acid, and a certain and standard Oleate is obtained.

Of the many Oleates that have been presented by the manufacturing chemists two only are represented in the new Pharmacopœia. They are as follows:

#### OLEATUM HYDRARGYRI. U. S. 1880.

##### *Oleate of Mercury.*

Yellow Oxide of Mercury, thoroughly dried,	1 part.
Oleic Acid,	9 parts.

“Heat the Oleic Acid, contained in a porcelain vessel, to near 74° C. (165.2° F.), taking care not to exceed that temperature. Gradually add the Oxide of Mercury and stir until it is dissolved.”

The Oleate of Mercury, made as above, is a 10 per cent. Oleate; by varying the amount of the Oxide it may be made 5, 15, or 20 per cent. strength, the 20 per cent. strength keeping much better than any weaker. It may be combined with Morphine by dissolving in any of the strengths 2 to 5 per cent. of the Alkaloid Morphine. Salts of Morphine will not dissolve in Oleic Acid.

#### OLEATUM VERATRINÆ. U. S. 1880.

##### *Oleate of Veratrine.*

Veratrine,	2 parts.
Oleic Acid,	98 parts.

“Rub the Veratrine with a small quantity of the Oleic Acid, in a warm mortar, to a smooth paste, add this to the remainder of the Oleic Acid, heated in a porcelain capsule, on a water-bath, and stir until it is dissolved.”

This is a 2 per cent. Oleate of Veratrine. Manufacturers



make it also 5 and 10 per cent. It can be made of these strengths in the same manner.

## OTHER OLEATES

May be made in the same general way as is represented in the foregoing formulæ.

OLEATE OF ACONITINE is usually made 2 per cent. of the Alkaloid Aconitine. Squibb claims a much stronger preparation by virtue of his process of preparing it.

OLEATE OF ATROPINE is usually made 2 per cent. of the Alkaloid Atropine.

OLEATE OF MORPHINE is usually made 2 per cent. of the Alkaloid Morphine. It is however made 5 and 10 per cent. by some manufacturers.

OLEATE OF QUININE is made 5, 10, 15, 20 or 25 per cent. of the Alkaloid Quinine.

OLEATE OF STRYCHNINE is usually made 2 per cent. of the Alkaloid Strychnine.

OLEATES OF THE METALS—Bismuth, Copper, Lead, Silver and Zinc are best made by most druggists, from the powdered Oleates of these Metals, which can be bought of the Manufacturing Chemists, and combined with Oleic Acid in any desired strength, in the same way as is directed for making Oleate of Mercury.

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## OLEORESINÆ—OLEORESINS.

Oleoresins are so little used that they are seldom prepared by retail druggists; yet there is no reason that they should not be, as they are no more difficult to make than a fluid extract. They are, as their name indicates, usually mixtures of oil and resins, and often other proximate principles of vegetable drugs. To obtain them the drug is exhausted by percolating with Ether, which dissolves these constituents; the percolate is then evaporated to the proper consistence. As the 1870 and 1880 Formulæ very nearly correspond, a comparison of them is unnecessary; the formula for making them by water-bath percolation, which is much more efficient, and using Naphtha instead of Ether, which is much more economical, being given instead.

## OLEORESINS BY WATER-BATH PERCOLATION.

FENNER'S WORKING FORMULÆ.

## OLEORESINA ASPIDII (1880).

*Oleoresina Felicis (1870), Oleoresin of Male Fern.*

Male Fern, in No 60 powder, 16 ounces.  
Naphtha or Gasoline, a sufficient quantity.

Pack the drug firmly in the water-bath percolator and pour a pint of Naphtha upon it, cover it closely and set in a warm place for two days; then pour hot water into the water-bath surrounding the percolator, and by means of a covered fire keep at a very moderate heat for one hour, then remove from the fire and begin to percolate, adding Naphtha in the percolator, and continue the percolation until 2 pints have passed. Distill off a pint and a half of Naphtha by means of the still and allow the remaining liquid to evaporate in an open vessel without heat until no odor of Naphtha remains.

## OLEORESINA CAPSICI.

*Oleoresin of Capsicum.*

Capsicum, in No. 60 Powder, 16 ounces.  
Naphtha or Gasoline, a sufficient quantity.

Pack the Capsicum firmly in the water-bath percolator and pour a pint of Naphtha upon it; cover closely and set in a warm place for two days, then pour hot water into the water-bath surrounding the percolator, and by means of a covered fire keep at a very moderate heat for one hour, then remove from the fire and begin to percolate, adding Naphtha to the percolator, and continue the percolation until two pints have passed. Distill off a pint and a half of Naphtha by means of the still and allow the remaining liquid to evaporate in an open vessel without heat until no odor of Naphtha remains, then pour off the liquid portion, drain the residue on a muslin strainer and add to it.

## OLEORESINA CUBEBAE.

*Oleoresin of Cubeb.*

Cubeb, in fine powder, 16 ounces.  
Naphtha or Gasoline, a sufficient quantity.

Pack the Cubeb firmly in the water-bath percolator and pour upon it a pint of Naphtha; cover closely and set into a warm place for two days; then pour hot water in the water-bath surrounding the percolator and, by means of a covered fire, keep at a very moderate heat for one hour; then begin to percolate, adding Naphtha to the percolator, and continue the percolation until two pints have passed. Distill off a pint and a half of Naphtha by means of the still, and allow the remaining liquid to evaporate in an open vessel, without heat, until no odor of naphtha remains.

### OLEORESINA ERGOTÆ.

#### *Oleoresin of Ergot.*

Ergot, in No. 60 powder, 16 ounces.  
Naphtha or Gasoline, a sufficient quantity.

Pack the Ergot firmly in the water-bath percolator and pour a pint of Naphtha upon it; cover closely and set in a warm place for two days; then pour hot water into the water-bath surrounding the percolator and, by means of a covered fire, keep at a very moderate heat for one hour; then remove from the fire and begin to percolate, adding Naphtha to the percolator, and continue the percolation until two pints have passed. Distill off a pint and a half of Naphtha, by means of the still, and allow the remaining liquid to evaporate in an open vessel, without heat, until no odor of Naphtha remains.

This Oleoresin is not officinal.

### OLEORESINA LUPULINI.

#### *Oleoresin of Lupulin.*

Lupulin, 16 ounces.  
Naphtha or Gasoline, a sufficient quantity.

Pack the Lupulin firmly in the water-bath percolator and pour a pint of Naphtha upon it; cover closely and set in a warm place for two days; then pour hot Water into the water-bath surrounding the percolator and, by means of a covered fire, heat very moderately for one hour; then begin to percolate, adding Naphtha to the percolator, and continue the percolation until two pints have passed. Distill off a pint and a quarter of Naphtha, by means of the still, and allow the remaining liquid to evaporate in an open vessel, without heat, until no odor of Naphtha remains.

## OLEORESINA PIPERIS.

*Oleoresin of Black Pepper.*

Black Pepper, in No. 60 powder,                    16 ounces.  
Naphtha or Gasoline,                    a sufficient quantity.

Pack the Pepper firmly in a water-bath percolator and pour a pint of Naphtha upon it; cover closely and set in a warm place for two days, then pour hot water into the water-bath surrounding the percolator and by means of a covered fire keep at a very moderate heat for one hour; then, begin to percolate, adding Naphtha to the percolator, and continue the percolation until two pints have passed. Distill off by means of the still, a pint and three-quarters of Naphtha and allow the remaining liquid to evaporate in an open vessel, without heat, until no odor of Naphtha remains, then separate the liquid from the crystals of piperin which have formed, by straining through muslin.

## OLEORESINA ZINGIBERIS.

*Oleoresin of Ginger.*

Ginger, in No. 60 powder,                    16 ounces.  
Naphtha or Gasoline,                    a sufficient quantity.

Pack the Ginger firmly in the water-bath percolator and pour a pint of Naphtha upon it; cover it closely and set in a warm place for two days, then pour hot water into the water-bath surrounding the percolator, and by means of a covered fire keep at a very moderate heat for one hour; then remove from the heat and begin to percolate, adding Naphtha to the percolator and continue the percolation until two pints have passed. Distill off a pint and three-quarters of Naphtha by means of the still and allow the remaining liquid to evaporate in an open vessel, without heat, until no odor of Naphtha remains.

## OTHER OLEORESINS.

Many other Oleoresins are made by manufacturing pharmacists, and are occasionally called for, the principal ones being of Allspice, Arnica, Canada Snake Root, Horse-chestnut, Lobelia, Savin, etc. They can all be made in the same general manner as has been heretofore described.

## OPIUM.

The 1870 Pharmacopœia recognizes as officinal Opium which, dried at the temperature of boiling water until it ceases to lose weight, shall yield at least 10 per cent. of morphine.

The 1880 Pharmacopœia does not recognize Opium as officinal unless, when dried as above, it will yield at least 12 per cent. of morphine when assayed by the stated method, and states that "Opium in its normal, moist condition should yield not less than 9 per cent. of morphine" when assayed by the stated process. The only effect that this change can have is to keep some of the lower grades of opium out of the market; good brands of opium, such as have been chiefly sold and used formerly, have been, as they are now, fully up to this standard.

As with Cinchona Bark, the best grades of Opium (frequently assaying 20 to 24 per cent.) are bought by large manufacturing houses for making morphine; but much will be found in the market that, when dried, will assay from 15 to 17 per cent of the alkaloid.

The new Pharmacopœia limits the alkaloidal percentage of powdered opium to 16 per cent. and directs that if it assays more than that it should be reduced to the proper percentage of strength by admixture with lower grades. Manufacturing chemists who now powder Opium, label it with their label, stating the percentage of Morphine which it contains; and druggists who buy Powdered Opium should only accept such as bears the label of some reliable house with the Morphine percentage stated.

Although Powdered Opium is directed to be used in making all officinal preparations in which Opium is required, it is safe to say that not more than one druggist in twenty uses it in making the liquid preparations.

It has never been the custom among the greater share of druggists to use Powdered Opium in making Opium preparations, although it has always been directed in the Pharmacopœias.

It is evident that Powdered Opium of the required assay contains from 3 to 5 per cent. more of Morphine than Opium in its normal, moist state; but, until recently, assayed Powdered Opium has not been supplied to the trade, and much of the so-called Powdered Opium was much below the moist Opium in alkaloidal strength; hence it was not strange that druggists should choose to make their preparations of the moist Opium, instead of the powdered as directed. True, the druggists might dry and powder it themselves; but not many will take that trouble, and, therefore it has come to be almost a universal custom to make the Opium preparations from the moist drug, using the same quantity as was directed of the powdered.

Whether the change in the standard of strength and the recent discussion of the Opium question in the pharmaceutical and medical Journals will bring about a revolution in this respect, remains to be seen.

The method of assaying Opium given in the new Pharmacopœia gives druggists who will take the trouble the means of testing the Opium they buy; but the mass of druggists are too busy, or have not the conveniences, for this kind of work, and must depend upon the integrity of the houses with whom they deal to supply them with a good article.

## OPIUM DENARCOTISATUM.

### *Denarcotised Opium.*

1880.

This preparation of Opium is a new official, having the same morphine strength as the Powdered Opium, but deprived of its narcotine and odorous principles. It is made by macerating Powdered Opium, containing 14 per cent. of Morphine with Ether, using first 5 parts of Ether to one of the opium, and after macerating for 24 hours pouring off; then macerating with two and one-half parts of Ether, twice successively, and pouring off as before. The Opium is then dried by gentle heat and enough Sugar of Milk added to make up the original weight of the Opium.

This preparation may be readily made by water-bath percolation.

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## PEPSINUM SACCHARATUM.

### *Saccharated Pepsin.*

1880.

Although Pepsin has been a staple article with druggists and physicians for many years, it is now for the first time introduced into the Pharmacopœia. No process is given for its manufacture, that being left to manufacturers who have facilities for obtaining the stomachs cheaply, and experience in producing the article.

The method now generally employed for making Pepsin is a modification of Scheffer's process, and is substantially as follows:

The fresh stomachs are deprived of their fat, cut open and macerated for several days in a "pickle," made by mixing 1 part of Hydrochloric Acid with 30 parts of Water. The liquid portion is then strained off and allowed to stand 24 hours to settle, when it is decanted; Salt (Chloride of Sodium) is then added to the liquid as long as it readily dissolves, and, after standing a few hours, the Pepsin which floats on the surface is skimmed off, put on a cotton cloth to drain, and then submitted to strong pressure, to force out the saline solution; it is then dried on plates of glass without heat, and, finally, powdered with nine times its weight of Sugar of Milk.

A new method of manufacturing so-called Pepsin has recently (Sept. 13, 1883) been patented by Dr. Carl L. Jensen. It consists in subjecting the stomachs to the action of heat and acid, whereby a gastric digestion takes place, and a peptone, containing their digestive or gastric ferments, is produced. It is then purified and dried and sold in the market as Crystal Pepsin.



## PETROLATUM.

(COSMOLINE, VASELINE, ETC.)

1880.

This excellent Ointment Base is now introduced into the Pharmacopœia,—although no process for making it is given. It is chiefly made by manufacturers of Petroleum, from the residuum which collects in storage tanks, oil wells, etc., etc. This substance, familiarly known as “B. S. Oil,” is collected, the lighter portions distilled off, and the residue transferred to a large percolator or cylinder partly filled with hot animal charcoal (bone black). The percolator is kept at a certain degree of heat during the filtering of the Petrolatum. It is deodorized and partly decolorized by passing through the animal charcoal, the first portions being perfectly colorless, but the subsequent portions gradually acquiring an amber color. It is then brought to the proper melting point by adding paraffin, if necessary. Manufacturers now furnish Petrolatum from white to dark color, the price varying with the lightness of the color, etc. It has almost altogether taken the place of lard in Ointments, the white Petrolatum making preparations as light in color and much superior in every way to those made with lard as a base. A small amount of wax should usually be added in making the Ointments to give them a little more consistence.

## PHYSOSTIGMINÆ SALICYLAS.

*Salicylate of Physostigmine.*

1880.

This new officinal seems to have been born before its time. If it does not die from inanition it cannot survive its long name.

## PICROTOXINUM.

*Picrotoxin.*

1880.

This is also a new officinal for which there seems to be no need. It is made from *Cocculus Indicus*.

## PILOCARPINÆ HYDROCHLORAS.

*Hydrochlorate of Pilocarpine.*

1880.

This new officinal is prepared from the leaves of Juborandi (*Pilocarpus pennatifolius*,) and is used for the same purposes as other preparations of this drug. It is as yet too expensive to be much used.

## PILULÆ—PILLS.

Since the general introduction of sugar and gelatine-coated pills, their manufacture has been almost entirely monopolized by manufacturing houses. The pill business has come to be a great nuisance to druggists, for the reason that so many manufacturers urge their claims for superiority upon the physicians, that a large stock of many different makes must be kept on hand in order to supply the demand.

It is not only unprofitable but very annoying to be obliged to keep so many manufacturers' pills on hand, but as yet there seems to be no way of avoiding it.

The pills that are included in the Pharmacopœia, constitute but a very small portion of those in use, and as manufacturer's pills are nearly always coated with sugar or gelatine, it may be said that scarcely any pills made by the Pharmacopœia formulæ are dispensed by druggists.

The making and coating of pills to any great extent is impracticable for the mass of druggists, because it requires

considerable apparatus and some experience and skill; and further, because there are so few of any but the leading or special pills used that it does not pay to make the small quantity required for the retail trade.

In the officinal formulæ for pills but few changes have been made, except the change to metric weight instead of troy weight in all the formulas. The following additions, omissions, transfers and changes in composition will be noticed:

ADDED.		OMITTED.	
Pilulæ Aloes et Ferri.			Pilulæ Quiniæ Sulphatis.
Pilulæ Phosphori.			Pilulæ Scillæ Composite.
			Pilula Saponis Composita.
TRANSFERRED.			
1870.		1880.	
Pilulæ Copai bæ	to		Massa Copai bæ.
Pilula Ferri Carbonatis	to		Massa Ferri Carbonatis.
Pilulæ Hydrargyri	to		Massa Hydrargyri.

#### CHANGES.

In all the formulæ in which Aloes is directed, the 1880 Pharmacopœia uses Purified Aloes instead of Socotrine Aloes as was directed in the 1870 revision.

#### PILULÆ CATHARTICÆ COMPOSITÆ.

Abstract of Jalap is used instead of Extract of Jalap as formerly.

#### PILULÆ FERRI IODIDI.

Reduced Iron is used instead of Iron Wire, for making the Iodide of Iron solution.

#### PULVURES—POWDERS.

The Powders of the Pharmacopœia have no especial claim as galenicals, other than that most of them have been handed down to us from the past as favorite compounds of eminent physicians. In the present revision four preparations have been added and two omitted that were officinal in the former edition.

## PULVIS ALOES ET CANELLÆ.

*Powder of Aloes and Canella (Hiera Picra).*

1870.

Socotrine Aloes, in fine powder,	4 ounces.
Canella, in fine powder,	1 ounce.

Rub them together until they are thoroughly mixed.

Although this preparation is dismissed from the new Pharmacopœia it is called for much more frequently than many of the powders that are retained. A drug store without "Picra" would be like a grocery without salt.

## PULVIS ANTIMONIALIS.

*Antimonial Powder (James' Powder).*

1880.

This powder has long been official in the British Pharmacopœia, and is familiar to nearly all American druggists, although it now first appears in the officinal list. It is perhaps more familiarly known as James' Diaphoretic Powder. The present formula is as follows:

Oxide of Antimony,	33 parts or 330 grains.
Precipitated Phosphate of Calcium,	67 parts or 670 grains.
Mix intimately.	

## PULVIS AROMATICUS.

*Aromatic Powder.*

	1870.	1880.
Cinnamon, in No. 60 powder,	3½ ounces	3 ounces.
Ginger, in No. 60 powder,	3½ ounces.	3 ounces.
Nutmeg, in No. 20 powder,	1½ ounces.	1½ ounces.
Cardamom Seeds, without capsule,	1½ ounces.	1½ ounces.

Crush the Cardamom Seeds and rub them with the Nutmeg and a portion of the Cinnamon until reduced to a fine powder; then add the remainder of the Cinnamon and the Ginger and mix thoroughly.

## PULVIS CRETÆ COMPOSITUS.

*Compound Chalk Powder.*

1880.

This powder is introduced chiefly for its convenience in

making chalk mixture. As this mixture is liable to "sour" in the summer, if long kept, it is desirable to make it extemporaneously, and for this purpose this powder is very convenient.  $\frac{1}{4}$  ounce of the powder rubbed with 1 ounce each of Cinnamon-water and Water makes the mixture.

The powder is made as follows

Prepared Chalk,	3 ounces.
Acacia, in fine powder,	2 ounces.
Sugar, in fine powder,	5 ounces.
Mix thoroughly.	

## PULVIS EFFERVESCENS COMPOSITUS.

*Compound Effervescing Powder.*

(*Seidlitz Powder.*)

This formula remains unchanged. It is repeated here for convenient reference.

Bi-carbonate of Sodium in fine powder,	480 grains.
Tartrate of Potassium and Sodium (Rochelle Salts),	1440 grains.

Mix intimately, divide the mixture into 12 parts, and wrap each portion in Blue paper.

Tartaric Acid, in fine powder, 420 grains.

Divide into 12 parts, and wrap each portion in white paper.

One of each constitutes a Seidlitz Powder.

## PULVIS GLYCYRRHIZÆ COMPOSITUS.

*Compound Liquorice Powder.*

1880.

This new officinal has been used by physicians for many years as a laxative and cleansing preparation. It is as follows :

Senna, in No. 60 powder,	2 $\frac{1}{4}$ ounces.
Liquorice Root, in No. 60 powder,	2 ounces.
Fennel, in No. 60 powder,	1 ounce.
Washed Sulphur,	1 ounce.
Sugar, in fine powder,	6 $\frac{1}{4}$ ounces.
Mix thoroughly.	

## PULVIS IPECACUANHÆ ET OPII.

*Powder of Ipecac and Opium (Dover's Powder).*

1870.	1880.
Powd. Ipecac, 1 ounce.	Ipecac, in No. 60
Powd. Opium, 1 ounce.	powder, 1 ounce.
	Powdered Opium, 1 ounce.
Powd. Sulphate of Potassium, 8 ounces.	Sugar of Milk, in
	No. 30 powder, 8 ounces.
Rub them together into a very fine powder.	Rub them together into a very fine powder.

The change in this preparation consists in the substitution of Sugar of Milk for Sulphate of Potassium. This change is criticised by many leading physicians, who contend that the Sulphate of Potassium is of much value in the preparation. Any change in this old-time preparation seems unwise unless it is for its benefit. See Pulvis Morphinæ Comp.

## PULVIS JALAPÆ COMPOSITUS.

*Compound Powder of Jalap.*

1870.	1880.
Powdered Jalap, 1 ounce av.	Jalap, in No. 60
	powder, 459 grains.
Powdered Bitartrate of Potassium (Cream of Tartar), 2 oz. av.	Bitartrate of Potassium in fine powder, 853 grains.
Rub them together until they are thoroughly mixed.	

## PULVIS MORPHINÆ COMPOSITUS.

*Compound Powder of Morphine (Tully's Powder).*

1880.

This preparation was introduced by Dr. Tully, and has enjoyed a considerable reputation among physicians as a substitute for Dover's Powder. It is now first made officinal.

Sulphate of Morphine,	22 grains.
Camphor,	1 ounce av.
Liquorice Root, in No. 60 Powder,	1 ounce av.
Precipitated Carbonate of Calcium,	1 ounce av.
Alcohol, sufficient.	

Rub the Camphor with a little Alcohol, to reduce it to a

powder, and then with the Liquorice Root and Precipitated Chalk until a uniform powder is produced. Then rub the Morphine with this powder gradually added until the whole is thoroughly mixed.

The following formulæ for Tully's Powder were published in FENNER'S FORMULARY many years ago :

Sulphate of Morphine,	8 grains.
Camphor, in fine powder,	160 grains.
Liquorice Root, in fine powder,	160 grains.
Prepared or Precipitated Chalk,	160 grains.

Mix.

Or,

Powdered Opium,	60 grains.
Camphor, in fine powder,	180 grains.
Liquorice Root, in fine powder,	180 grains.
Prepared or Precipitated Chalk,	180 grains.

Mix.

### PULVIS RHEI COMPOSITUS.

*Compound Powder of Rhubarb.*

	1870.	1880.
Rhubarb, in No. 60 Powder,	2 ounces.	2 1/2 ounces.
Magnesia (Calcined),	6 ounces.	6 1/2 ounces.
Ginger, in No. 60 Powder,	1 ounce.	1 ounce.

Rub them together until they are thoroughly mixed.

### PYROXYLINUM. U. S. 1880.

*Pyroxylin 1880. Pyroxylon 1870. Soluble Gun Cotton.*

The formula and process for making is essentially the same in both revisions.

Notice the change in the orthography, both in the Latin and English.

### QUINIDINÆ SULPHAS.

*Sulphate of Quinidine.*

This Salt is newly made officinal, although it has been considerably used under the name of Sulphate of Quinidia for many years.



## QUININA—QUININE.

The Alkaloid which has formerly been called Quinia both in Latin and English is now called Quinina in Latin and Quinine in English. This makes a corresponding change of course, in all of its salts. The 1870 revision recognized but two salts of Quinia, viz.:

Quinia Sulphas,  
Quinia Valerianas.

Sulphate of Quinia.  
Valerianate of Quinia.

The 1880 revision recognizes five salts of Quinine, viz.:

Quininæ Bisulphas.  
Quininæ Hydrobromas.  
Quininæ Hydrochloras.  
Quininæ Sulphas.  
Quininæ Valerianas.

Bisulphate of Quinine.  
Hydrobromate of Quinine.  
Hydrochlorate of Quinine.  
Sulphate of Quinine.  
Valerianate of Quinine.

## RESINÆ — RESINS.

Among Resins are naturally included a large share of the so-called “Eclectic Concentrated Medicines” or “active principles” of medicinal plants. The Pharmacopœia mentions but five Resins altogether, although many are regularly used by all kinds of physicians, and kept by all druggists.

It is obvious that the process of water-bath percolation is best adapted for exhausting drugs when it is desired to obtain their resins, for the heat aids the menstruum very materially to dissolve the resinous principles. The formulæ for the Resins of the Pharmacopœia are therefore given by that process, and other Resins not officinal may be made in the same general way. Manufacturers do not follow the Pharmacopœia in making the officinal resins, using cheaper methods.

## RESINA.

*Resin (Colophony).*

This is the ordinary Resin of commerce — “the residue left after distilling off the volatile oil from turpentine.”

## RESINA COPAIBÆ.

*Resin of Copaiba.*

This is the residue left after distilling off the volatile oil

from Copaiba. It may be made if desired by distilling Balsam of Copaiba by means of the water-bath and still until the oil no longer passes over.

## RESINA JALAPÆ.

### *Resin of Jalap.*

MADE BY WATER-BATH PERCOLATION.

Jalap, in No. 60 powder, 16 ounces avoird.  
Alcohol,  
Water, a sufficient quantity.

Moisten the drug with 6 ounces of Alcohol and pack firmly in the water-bath percolator. Pour upon it 10 ounces of Alcohol and set in a warm place for two days; then heat moderately, and after one hour begin to percolate, adding Alcohol to the drug and continuing the heat and percolation until two pints have passed, or until the drug is exhausted, which will be shown by dropping a few drops of the percolate into cold water, when, if it is exhausted it produces little or no turbidity. Distill off the alcohol by means of the water-bath and still until only 6 ounces of the extract remains; add this slowly and with constant stirring to a gallon of cold water and allow the precipitate to subside; then pour off the supernatant fluid, or draw it off with a siphon, and wash the precipitated Resin twice successively by pouring on cold water and drawing off as before. Finally place the Resin upon a muslin strainer, drain and dry by gentle heat.

## RESINA PODOPHYLLI.

### *Resin of Podophyllum (May Apple).*

MADE BY WATER-BATH PERCOLATION.

Podophyllum (Mandrake Root), in No. 60  
powder, 16 ounces av.  
Hydrochloric Acid, 1 fl.drachm.  
Alcohol,  
Water, each, a sufficient quantity.

Moisten the drug with 6 ounces of Alcohol and pack firmly in the water-bath percolator. Pour upon it 10 ounces of Alcohol and set in a warm place for two days; then heat moderately, and after one hour begin to percolate, adding Alcohol to the drug and continuing the heat and percolation

until two pints have passed, or until the drug is exhausted which will be shown by dropping a few drops of the percolate into cold water, when, if exhausted, little or no turbidity will be produced. Distill off the alcohol by means of a water-bath and still until only 3 ounces of the Extract remains. Add this slowly and with constant stirring to a pint of very cold water which has been previously mixed with the Hydrochloric Acid, and allow the precipitate to subside. Then decant the liquid and wash the precipitate twice successively with cold water, and finally spread it in thin layers upon a filter, drain, and dry by exposure to the air in a cool place.

### RESINA SCAMMONII.

#### *Resin of Scammony.*

Scammony, in No. 60 powder, 16 ounces av.

Alcohol,

Water, each, a sufficient quantity.

“Digest the Scammony with successive portions of boiling alcohol until exhausted, mix the tinctures, and reduce the mixture to a syrupy consistence, by distilling off the alcohol. Then add the residue to two and one-half pints of water, separate the precipitate formed, wash it thoroughly with water and dry it with gentle heat.”

### OTHER RESINS OR RESINOIDS.

The foregoing are all the Resins that have official recognition, but among the so-called “Eclectic” remedies are a great many valuable Resins or “Resinoids” which are much used by physicians. They are nearly all made by first obtaining an alcoholic tincture of the drug, then distilling off most of the alcohol and precipitating the “Resinoid” or “active principle” from the residue by pouring it in water. The water-bath percolator is the best apparatus for exhausting the drugs.

### SODA.

In the new revision the only change in the Sodium Salts is that nine have been added to the official list. They are as follows:

Sodii Benzoas.

“ Bisulphis.

“ Bromidum.

“ Chloras.

Sodii Iodidum.

“ Pyrophosphas.

“ Salicylas.

“ Santoninas.

Sodii Sulphocarbolas.

## SPIRITUS—SPIRITS.

The Spirits of the Pharmacopœia are mostly solutions of volatile substances or principles in alcohol, or an alcoholic liquid. They were formerly made by distillation, but are now chiefly prepared by dissolving essential oils or volatile substances in the alcoholic medium, although the process of distillation makes a finer preparation than can usually be made by this method. In the 1880 revision four new Spirits have been added to the list, they are :

Spiritus Ætheris.  
Spiritus Aurantii.

Spiritus Gaultheriæ.  
Spiritus Odoratus.

## SPIRITUS ÆTHERIS.

*Spirit of Ether.*

1880.

	By Weight.	By Measure.
Ether,	3 ounces.	4 fl.ounces.
Alcohol,	7 ounces.	8½ fl.ounces.
Mix.		

This is very nearly the same as most druggists have been in the habit of making and selling as Hoffman's Anodyne, although it differs from it in the omission of the Etherial Oil. One part by measure of Ether to two of Alcohol is the usual rule.

## SPIRITUS ÆTHERIS COMPOSITUS.

*Compound Spirit of Ether (Hoffman's Anodyne).*

	1870.		1880.
Ether,	8 fl.ounces.	Stronger Ether,	30 parts.
Alcohol,	16 fl.ounces.	Alcohol,	67 parts.
Etherial Oil,	6 fl.drachms.	Etherial Oil,	3 parts.
Mix them.		Mix them.	

The chief difference in the 1870 and 1880 formula is that in the later the Stronger Ether is used. The proportion of Alcohol and Etherial Oil is increased a trifle also in the later preparation.

## SPIRITUS ÆTHERIS NITROSI.

*Spirit of Nitrous Ether. Sweet Spirit of Nitre.*

The methods of making Spirit of Nitrous Ether differ

considerably, although the result is practically the same,—the finished product in either case representing 5 per cent.\* of Ethyl Nitrite. As the retail druggist seldom prepares Spirit of Nitre, the process is not here repeated.

Several manufacturing chemists now prepare Nitrous Ether, or, as they term it, “Concentrated Nitrous Ether,” one part of which, when added to 19 parts (by weight) of alcohol, makes the present officinal Spirit of Nitrous Ether.

## SPIRITUS AMMONIÆ.

### *Spirit of Ammonia.*

The 1880 process for making this preparation is entirely different from the former revision, Stronger Water of Ammonia being used to generate the Ammonia Gas instead of Chloride of Ammonium and Lime as heretofore. The later method gives a more definite result and is less trouble than the former.

The finished product should contain 10 per cent. of Ammonia Gas. It is made by the present authority, by heating 45 parts of Stronger Water of Ammonia very gradually and not exceeding 60° C. (140° F.) in a flask connected with a well cooled receiver into which 80 parts of Alcohol are introduced, until the gas has passed over and is absorbed by the alcohol, and then adding enough alcohol to reduce the liquid so that it shall contain 10 per cent. of the Gas.

## SPIRITUS AMMONIÆ AROMATICUS.

### *Aromatic Spirit of Ammonia.*

1870.

Carb. of Am-  
monium, 480 grains.  
Water of Am-  
monia, 3 fl.ounces.  
Oil of Lemon, 2½ fl.drachms.  
Oil of Nutmeg, 40 minims.  
Oil of Lavender, 15 minims.  
Alcohol, 1½ pints.  
Water, enough  
to make 2 pints.

1880.

Carb. of Am-  
monium, 516 grains.  
Water of Am-  
monia, 3 fl.ounces.  
Oil of Lemon, 3 fl.drachms.  
Oil of Lavender  
Flowers, 15 minims.  
Oil of Pimenta, 15 minims.  
Alcohol, 24¼ fl.ounces.  
Distilled Water,  
enough to make 2 pints.

\*Prof. Diehl (1877) in an elaborate paper has shown that the Spirit of Nitrous Ether of the 1870 Pharmacopœia did not contain 5 per cent. of Ethyl Nitrite, as that quantity would make its specific gravity 0.823 instead of 0.837, as it really was. The present revision, however, gives the density of the spirit at 0.823 to 0.825 which corresponds to 5 per cent. of Ethyl Nitrite.

Mix  $4\frac{1}{2}$  ounces of Distilled Water with the Water of Ammonia in a bottle and add the Carbonate of Ammonium previously powdered; stop the bottle and agitate until the Carbonate is dissolved. In another bottle dissolve the oils in the Alcohol and gradually add the Solution of Ammonia, and lastly enough Distilled Water to make two pints, and filter.

The 1880 revision directs that the Alcohol used shall be recently distilled and kept in glass. The object of this is to prevent discoloration.

Alcohol for this purpose may be redistilled by druggists.

The British Aromatic Spirit of Ammonia is made by distillation.

### SPIRITUS ANISI.

#### *Spirit of Anise.*

	1870.	1880.
Oil of Anise,	1 fl.ounce.	$1\frac{1}{3}$ fl.ounce.
Alcohol,	15 fl.ounces.	$14\frac{2}{3}$ fl.ounces.
Mix.		

### SPIRITUS ARMORACIÆ COMPOSITUS. *Br.*

#### *Compound Spirit of Horseradish.*

Horseradish Root, scraped,	10 ounces av.
Bitter Orange Peel cut and bruised,	10 ounces av.
Nutmeg, bruised,	$\frac{1}{4}$ ounce av.
Diluted Alcohol,	77 fl.ounces.
Water,	19 fl.ounces.
Mix and distill 5 pints.	

### SPIRITUS AURANTII.

#### *Spirit of Orange.*

1880.

Oil of Orange Peel,	6 parts or $1\frac{1}{8}$ fl.ounces.
Alcohol,	94 parts or $14\frac{7}{8}$ fl.ounces.
Mix.	

### SPIRITUS CAJUPUTI. *Br.*

#### *Spirit of Cajuput.*

Oil of Cajuput,	$\frac{1}{2}$ ounce.
Rectified Spirit,	$24\frac{1}{2}$ ounces.
Mix.	

## SPIRITUS CAMPHORÆ.

*Spirit of Camphor.*

1870.		1880.	
Camphor,	4 $\frac{3}{8}$ ounces av.	Camphor,	3 $\frac{1}{8}$ ounces av.
Alcohol,	2 pints.	Alcohol,	26 $\frac{1}{2}$ fl. ounces.
		Water,	6 fl. ounces.
“Dissolve the Camphor in the Alcohol and filter through paper.”		“Dissolve the Camphor in the Alcohol, add the Water and filter through paper.”	

The change in so familiar a preparation as Spirit of Camphor seems entirely uncalled for. The 1880 preparation contains nearly 30 per cent. less of Camphor, and the addition of Water makes it inexpedient to mix with liniments which contain Oils, in which it is often prescribed. Few druggists will change to the new formula, as they cannot in so common a preparation without displeasing their customers.

## SPIRITUS CHLOROFORMI.

*Spirit of Chloroform.*

1870.		1880	
Purified Chloroform,	600 grains.		623 grains.
Alcohol,	15 fl. ounces.		15 fl. ounces.

“Dissolve the Chloroform in the Alcohol.” This Spirit was formerly called Chloric Ether.

## SPIRITUS CINNAMOMI.

*Spirit of Cinnamon.*

1870.		1880.	
Oil of Cinnamon,	1 fl. ounce.		1 $\frac{1}{3}$ fl. ounces.
Alcohol,	15 fl. ounces.		14 $\frac{2}{3}$ fl. ounces.

Dissolve the Oil in the Alcohol.

## SPIRITUS FRUMENTI.

*Whisky.*

This preparation is already so familiar to most druggists that no remarks upon it are necessary.



## SPIRITUS GAULTHERIÆ.

*Spirit of Wintergreen.*

1880.

Oil of Gaultheria,	3 parts or 165 minims.
Alcohol,	97 parts or 1 pint.

Dissolve the Oil in the Alcohol.

This preparation is now, for the first time, officinal, although it has been used by druggists probably more than most of the other "Essences."

It is very doubtful if this weak solution of the Oil will satisfy druggists' customers. It is much more like "peddlers' essence" than like the "essence" customers usually expect to buy at a drug store. It is much better made as follows:

Oil of Wintergreen,	1 fl.ounce.
Alcohol,	15 fl.ounces.

Mix.

## SPIRITUS JUNIPERI.

*Spirit of Juniper.*

	1870.	1880.
Oil of Juniper,	152 minims.	224 minims.
Alcohol,	1 pint.	1 pint,

Dissolve the Oil in the Alcohol.

## SPIRITUS JUNIPERI COMPOSITUS.

*Compound Spirit of Juniper.*

	1870.	1880.
Oil of Juniper,	22 minims.	27 minims.
Oil of Caraway,	2 minims.	3 minims.
Oil of Fennel,	2 minims.	3 minims.
Alcohol,	20 fl.ounces.	20 fl.ounces.
Water,	12 fl.ounces.	12 fl.ounces.

Dissolve the Oils in the Alcohol, add the Water and mix.

## SPIRITUS LAVENDULÆ.

*Spirit of Lavender.*

	1870.	1880.
Oil of Lavender Flowers,	152 minims.	220 minims.
Alcohol,	1 pint.	1 pint.

Dissolve the Oil in the Alcohol.

## SPIRITUS LAVENDULÆ COMPOSITUS.

*Compound Spirit of Lavender.*

1870.

This preparation has been very properly transferred to the Tinctures (which see) in the late revision of the Pharmacopœia.

## SPIRITUS LIMONIS.

*Spirit of Lemon—Essence of Lemon.*

This preparation remains practically unchanged in the new revision. It is :

Oil of Lemon,	6 parts or 1 fl.ounce.
Lemon Peel, freshly grated	4 parts or ½ ounce av.
Alcohol sufficient to make	100 “ or 1 pint.

Mix, macerate and filter.

A few Fustic Chips answers the same purpose for coloring the preparation as the Lemon Peel, and is sometimes more convenient.

## SPIRITUS MENTHÆ PIPERITÆ.

*Spirit of Peppermint—Essence of Peppermint.*

	1870.	1880.
Oil of Peppermint,	1 fl.ounce.	1⅜ fl.ounce.
Peppermint, in coarse powder,	120 grains.	60 grains.
Alcohol, enough to make	a pint.	a pint.

Dissolve the Oil of Peppermint in 14 fl.ounces of Alcohol, add the Peppermint and macerate for 24 hours; then filter and add enough Alcohol through the filter to make a pint. If it does not filter clear, a little powdered Carbonate of Magnesium may be added to the filter.

The 1880 preparation is nearly 40 per cent. stronger than the 1870, which seems needless, as the proportion of one ounce of the oil in a pint is strong enough for the general requirements of this preparation, in fact, even stronger than is usually prepared by druggists.

Oil of Peppermint, as it is bought in the market, will seldom make a clear “essence” when dissolved with Alcohol, but with redistilled Oil of Peppermint this does not occur. Druggists may readily redistill the oil if desired.

## SPIRITUS MENTHÆ VIRIDIS.

*Spirit of Spearmint. Essence of Spearmint.*

	1870.	1880.
Oil of Spearmint,	1 fl.ounce.	1 $\frac{3}{8}$ fl.ounce.
Spearmint, in coarse powder,	120 grains.	60 grains.
Alcohol, sufficient to make	a pint.	a pint.

Dissolve the Oil of Spearmint in 14 fl.ounces of Alcohol, add the Spearmint and macerate for 24 hours; then filter and add enough Alcohol through the filter to make a pint. If it does not filter clear add a little powdered Carbonate of Magnesium to the filter.

The same remarks may be made of this preparation as of the one preceding (which see).

## SPIRITUS MYRCIÆ.

*Spirit of Myrcia — “ Bay Rum.”*

	1880.	
	By weight.	By measure.
Oil of Myrcia (Bay leaves),	16 parts.	1 fl.ounce.
Oil of Orange Peel,	1 part.	34 minims.
Oil of Pimenta,	1 part.	28 minims.
Alcohol,	1000 parts.	78 fl.ounces.
Water,	782 parts.	49 fl.ounces.

To make 1800 parts, or 1 gallon.

“ Mix the Oils with the Alcohol, and gradually add the Water to the solution. Set the mixture aside in a well-stopped bottle for eight days, then filter through paper in a well-covered funnel.”

It is evident that the proportion of Oil of Bay and Alcohol in this preparation is much greater than is necessary. Made in this manner it is not only expensive but unfit for the use for which it is usually required. An excellent formula for Bay Rum was published in No. 14 of THE FORMULARY, page 205.

## SPIRITUS MYRISTICÆ.

*Spirit of Nutmeg — Essence of Nutmeg.*

	1870.	1880.
Oil of Nutmeg,	153 minims.	220 minims.
Alcohol,	1 pint.	1 pint.
Dissolve the Oil in the Alcohol.		

## SPIRITUS ODORATUS.

*Perfumed Spirit—Cologne Water.*

1880.

	By weight.	By measure.
Oil of Bergamot,	16 parts.	2 fl.ounces.
Oil of Lemon,	8 parts.	1 fl.ounce.
Oil of Rosmary,	8 parts.	1 fl.ounce.
Oil of Lavender Flowers,	4 parts.	$\frac{1}{2}$ fl.ounce.
Oil of Orange Flowers (Neroli),	4 parts.	$\frac{1}{2}$ fl.ounce.
Acetic Ether,	2 parts.	$\frac{1}{4}$ fl.ounce.
Alcohol,	800 parts.	106 fl.ounces.
Water,	158 parts.	17 fl.ounces.

To make 1000 parts, or 1 gallon.

“Dissolve the Oils and the Ether in the Alcohol and add the Water. Set the mixture aside in a well-closed bottle for eight days, then filter through paper in a well-covered funnel.”

This makes an expensive Cologne, without permanence of odor, unlike those which are popular and not so good as many others for which formulæ are published in FENNER'S FORMULARY and other standard works. (See formula in this number.)

SPIRITUS ROSMARINI, *Br.**Spirit of Rosmary.*

Oil of Rosmary,	$\frac{1}{2}$ fluidounce.
Rectified Spirit,	24 $\frac{1}{2}$ fluidounces.

Dissolve the Oil in the Spirit.

## SPIRITUS VINI GALLICI.

*Brandy.*

“An Alcoholic liquid obtained by the distillation of fermented grapes, and at least four years old.”

## STRYCHNINA—STRYCHNINE.—1880.

*Strychnia — 1870.*

The name of this preparation is changed as above in common with other alkaloids. Sulphate of Strychnine is the

only officinal salt of this alkaloid. Its name is changed as follows :

1870.	1880.
Strychniæ Sulphas.	Styrchninæ Sulphas.
Sulphate of Strychnia.	Sulphate of Strychnine.

## SUCCI—JUICES.

Juices have been omitted from the present revision of the Pharmacopœia. The 1870 revision contained formulæ for two only, but four are officinal in the British Pharmacopœia. They are, at best, but uncertain preparations, but as they are sometimes prescribed the formulæ are here given.

Juices considered as medicines are the expressed juices of plants, preserved by adding to them one-third their volume of alcohol. Fruit juices are preserved in a different manner and are seldom used for medicinal effect.

### SUCCUS CONII.

#### *Juice of Conium.*

1870.

Fresh Conium Leaves; a convenient quantity,  
Alcohol, a sufficient quantity.

“Bruise the leaves thoroughly in a mortar, press out the juice, and to every 5 measures of juice add one of alcohol, set aside the Liquid for seven days and filter.

“Keep in a cool place.”

### SUCCUS HYOSCYAMI, *Br.*

#### *Juice of Hyoscyamus.*

Fresh Henbane Leaves, a convenient quantity,  
Rectified Spirit, a sufficient quantity.

“Bruise the leaves in a stone mortar; press out the juice; and to every 3 measures of juice add one measure of the spirit. Set aside for seven days and filter. Keep in a cool place.”

### SUCCUS SCOPARII, *Br.*

#### *Juice of Broom.*

Fresh Broom Tops, a convenient quantity,  
Rectified Spirit, a sufficient quantity.

“Bruise the Broom Tops in a stone mortar; press out the

juice ; and to every 3 measures of juice add one of the Spirit. Set aside for seven days, and filter. Keep in a cool place."

Broom should not be mistaken for Broom Corn as it sometimes is.

### SUCCUS TARAXACI.

#### *Juice of Dandelion.*

1870.

Fresh Dandelion, a convenient quantity,  
Alcohol, a sufficient quantity.

" Bruise the Dandelion thoroughly in a mortar, press out the juice, and to every five measures of Juice add one of alcohol, set aside the liquid for seven days, and filter. Keep in a cool place."

### SUPPOSITORIA—SUPPOSITORIES.

The 1870 Pharmacopœia contained, in addition to the general formula for making suppositories, nine formulas for special preparations of this kind. In the 1880 revision these latter have been omitted,—the general formula only being retained. This is a wise omission, inasmuch as suppositories are made of many varying proportions of the medicinal ingredients, and a prescription for Morphine or Opium or Belladonna suppositories is uncertain unless the quantity of the medicine desired in each is specified. The 1870 Pharmacopœia directed the suppositories to be made 30 grains each, the 1880 revision designates 15 grains as the size which is generally better and is about the same size as are furnished by manufacturers and made by the moulds usually kept by druggists.

Many substances have been employed as a base for suppositories, but none has been found so suitable for this purpose as Oil of Theobroma (" Butter of Cacao").

It melts readily at the temperature of the body, yet has consistence enough to retain its form at ordinary temperatures. It is mild, bland, and non-irritant. Many attempts have been made to introduce suppositories in which Gelatin is used as a base ; but without success, for the reason that it cannot be made soluble at the normal temperature of the body, and is therefore worthless for this purpose.

The following is in substance the general formula for suppositories given in the 1880 Pharmacopœia.

Mix the medicinal substance or substances (previously

brought to a proper consistence if necessary) with a small quantity of Oil of Theobroma, by rubbing them together, and add the mixture to the remainder of the Oil of Theobroma, previously melted and cooled to the temperature of  $35^{\circ}\text{C}$ . ( $95^{\circ}\text{F}$ .). Then mix thoroughly without applying more heat and immediately pour the mixture into suitable moulds, which have been previously cooled on ice. The melted oil, etc., should be stirred before filling each mould.

Suppositories may be made without moulds by mixing the medicinal substance, or substances with a small portion of the Oil of Theobroma in a mortar which has been slightly warmed, and then adding the remainder of the Oil of Theobroma and mixing thoroughly. When thus mixed the mass may be transferred to a pill tile (which has been sprinkled with flour or other convenient substance to prevent it sticking), rolled out and divided the same as a pill mass. The sections may then be made conical in shape by rolling one end of them on the pill tile.

This is by far the most convenient way to make suppositories when prescribed, and it insures a more even distribution of the medicinal agent than when made by heat, as it is almost impossible to incorporate many of the solid extracts with the melted oil.

The solid Extracts must be softened by rubbing with a little water or alcohol before mixing with the Oil.

Several machines for making suppositories by the cold process have been invented, some of which are very good, though but few druggists have enough demand for suppositories to make it profitable to buy one.

The following general formula for making one dozen 15 grains suppositories will be found convenient for reference.

The medicinal substance or substances.

Oil of Theobroma, sufficient to make 180 grains.

Make as previously directed.

This is the size that is usually prescribed as rectal suppositories, with which druggists are most familiar. They are usually made conical in form.

Vaginal suppositories are usually made at least double this size, and oviform.

Urethral Suppositories are generally made "long, slim and slender," like a pipe stem.

Pessaries are made larger than any of the preceding, and usually ob-oviform. Suppositories are also made hollow for the introduction of medicine, but are not in general favor, as the prolonged action of the medicine by the gradual melting of the suppository is usually desired.



## SYRUPI — SYRUPS.

In the new Pharmacopœia nearly all the formulæ for Syrups have been somewhat changed,—either in composition, proportion of ingredients or manner of making. Some of these changes are advantageous, while others are greatly to be questioned.

The change to parts by weight instead of fluid measure, if followed, will necessitate a rigid adherence to the officinal simple syrup, in order that the proportion of the ingredients may be correct. While this would probably be an improvement, it is a well-known fact that not one druggist in a hundred makes simple syrup strictly in accordance with the officinal formula ; hence, if used by weight, the preparations with which it is combined would not correspond with the official standard.

In the new Pharmacopœia eleven new syrups have been introduced, some of them preparations for which officinal formulæ have long been needed.

The change in the method of making most of the syrups in which sugar is to be dissolved—the new revision directing the sugar to be dissolved by agitation instead of by heat, as formerly—is to be commended, although the process of water-bath percolation is preferable, when any considerable quantity of syrup is to be made. In working the formula, therefore, the method of making, by water-bath percolation, as described under syrup, may be employed in any of them except those containing acids, etc., which would effect the tinned surface of the percolator, or those in which heat is inadmissible.

Only the best quality of granulated sugar should be used for making syrups, and the water should, if not distilled, be free from all impurities. Rain water, boiled and filtered, is sufficiently pure for most purposes.

Druggists very generally make their Simple Syrup for winter use lighter than for summer. A few drops of Oil of Cloves, rubbed with a portion of the syrup and added to each gallon, will help to preserve it in warm weather.

## SYRUPUS—SYRUPUS SIMPLEX.

*Syrup.—Simple Syrup.*

	1870.	1880.
Sugar, in coarse powder,	283 $\frac{3}{4}$ oz. av.	283 $\frac{3}{8}$ oz. av.
Distilled water, enough to make	2 pints.	2 pints.
Weight in grains,	19205	19102
“ in avoird. ounces (nearly),	43 $\frac{7}{8}$	43 $\frac{2}{3}$
Specific gravity,	1.317	1.310

Dissolve the Sugar with the aid of heat in 11 fluidounces of Distilled Water, raise the temperature to the boiling point, and strain the solution while hot. Then incorporate with the solution enough Distilled Water, added through the strainer, to make the Syrup measure two pints, or weigh as above.

## MADE BY WATER-BATH PERCOLATION.

Sugar, granulated, 7 pounds 1 $\frac{1}{2}$  ounces av.  
 Distilled, or pure Water, enough to make a gallon.

Having covered the perforated diaphragm of the water-bath percolator with a piece of muslin or canton flannel, put the sugar upon it in the percolator, and add to it 3 pints of water, heat the solution to boiling, with occasional stirring, then draw off by the stop-cock and add enough Distilled Water through the percolator to make a gallon.

It will readily be seen that this is the most convenient and practical way to make Simple Syrup. It is not only made, but strained or filtered at the same operation, and produces a clear, bright syrup.

If it is desirable to make the syrup (or any syrup), without heat, it may be made in the same manner, simply omitting the heat.

## SYRUPUS ACACIÆ.

*Syrup of Acacia (Gum Arabic).*

	1870.	1880.
Gum Arabic,	2 tr.ounces.	Mucilage of Acacia, 25 parts.
Sugar,	14 tr.ounces.	Syrup, 75 parts.
Water,	8 fl.ounces.	Mix them.

“ Dissolve the Gum Arabic in the Water, without heat; then having added the Sugar, dissolve it with a gentle heat and strain.”

“ This Syrup should be freshly made when required for use.”

The proportion of one part by measure of mucilage to

three parts of syrup, although not exactly correct, is accurate enough for making this syrup extemporaneously.

MADE BY WATER-BATH PERCOLATION.

*Fenner's Formula.*

Acacia, granulated,	3 ounces av.
Sugar, granulated,	24 ounces av.
Oil of Cloves,	10 minims.
Water, enough to make	2 pints.

Dissolve the Acacia by stirring it from time to time in eight ounces of water. When it is dissolved put the sugar in the water-bath percolator and add the solution and four ounces of water to it; heat gently and stir occasionally until the sugar is dissolved, then draw off by the stop-cock and add enough water through the percolator to make two pints of the syrup. Rub the Oil of Cloves with an ounce of the syrup and mix it with the remainder by agitation.

Syrup Acacia made in this manner will keep sweet through the summer.

SYRUPUS ACIDI CITRICI.

*Syrup of Citric Acid.*

1870.	1880.
Citric Acid, 120 grains.	Citric Acid, 150 grains.
Oil of Lemon, 4 minims.	Water, 2½ fl. d'chms.
Syrup, 2 pints.	Spirit of } 95 minims.
(See directions for making	Lemon, }
U. S. 1870.)	Syrup, 2 pints.

“ Mix the Spirit of Lemon with the Syrup contained in a bottle; then add, gradually, the Citric Acid, dissolved in the water, shaking the bottle after each addition until the whole is thoroughly mixed.” (U. S. 1880.)

SYRUPUS ACIDI HYDRIODICI.

*Syrup of Hydriodic Acid.*

	1880.
Iodine,	10 parts or 190 grains.
Alcohol,	80 “ or 4 fl. ounces.
Syrup,	150 “ or 5 fl. ounces.
Sugar,	500 “ or 22 ounces av.
Spirit of Orange,	5 “ or 2 fl. drachms.
Distilled Water, a sufficient quantity to make 1000 parts or 2 pints.	

For directions for making see U. S. P. 1880. As a current of hydrosulphuric acid gas is required to be passed through this preparation during the process of making, it will be made by but few druggists, therefore the directions for making are not here repeated.

This Syrup contains one per cent. of absolute Hydriodic Acid.

## SYRUPUS ALII.

### *Syrup of Garlic.*

This Syrup varies so little in the new revision from the former authority that a comparison is unnecessary.

It is made as follows:

Fresh Garlic, sliced and bruised,	6½ ounces av.
Sugar, in coarse powder,	26 ounces av.
Diluted Acetic Acid,	1 pint.

Macerate the Garlic for four days with ten ounces of Diluted Acetic Acid and express the liquid. Then mix the residue with the remainder of the Acid and again express until enough additional liquid has been obtained to make the whole, when filtered, measure a pint. Then pour the filtered liquid upon the Sugar contained in a bottle and agitate occasionally until it is dissolved. Keep the Syrup in well stopped, filled bottles in a cool place.

## SYRUPUS ALTHÆA.

### *Syrup of Althæa.*

1880.

This is a new officinal preparation which has similar demulcent properties as syrup of acacia. It was in times past official in the London and Edinburgh Pharmacopœias, and is now officinal in the German, with which formula the present U. S. corresponds.

Althæa root, cut,	4 parts or 1 ounce av.
Sugar, granulated,	60 parts or 15 ounces av.
Water, a sufficient quantity to make 100 parts or 1 pint.	

“Having washed the Althæa with cold Water, pour upon it fourteen ounces of cold Water and macerate for one hour, stirring frequently; then drain through flannel without expressing. To nine fluid ounces of the drained liquid add

the Sugar and dissolve it by agitation without heat. This Syrup should be freshly made, when required for use."

### SYRUPUS AMYGDALÆ.

*Syrup of Almond (Orgeat).*

1870.	1880.
Sweet Almond, 4 tr.ounces.	Sweet Almond, 5 oz. av.
Bitter Almond, $1\frac{1}{3}$ tr.ounces.	Bitter Almond, $1\frac{1}{2}$ oz. av.
Sugar, 24 tr.ounces.	Sugar, 25 oz. av.
Water, 16 fl.ounces.	Orange Flower
(See directions for making,	Water, $2\frac{3}{8}$ fl.oz.
U. S. 1870.)	Water, enough
	to make 2 pints.

"Having blanched the Almonds rub them to a very fine paste, adding, during the trituration,  $1\frac{1}{2}$  ounces of Water and 5 ounces of Sugar. Mix the paste thoroughly with the Orange Flower Water and 15 ounces of Water, strain with strong expression, and add enough Water to the dregs to obtain, after renewed expression, 25 fluidounces of strained liquid. To this add the remainder of the Sugar, dissolve it by agitation, without heat, and strain through muslin. Keep the Syrup in well-stopped, filled bottles in a cool place." (U. S. 1880.)

### SYRUPUS AURANTII.

*Syrup of Orange.—1880.*

*(Syrup of Orange Peel.—1870.)*

1870.

Sweet Orange Peel, recently dried  
and in moderately fine powder, 2 tr.ounces.  
Carbonate of Magnesium, 240 grains.  
Sugar, in coarse powder, 28 tr.ounces.  
Alcohol,  
Water, each, a sufficient quantity.

"Moisten the Orange Peel with half an ounce of Alcohol, introduce it into a conical percolator and pour Alcohol upon it until 6 fluidounces of tincture have passed, evaporate this portion at a temperature not exceeding  $120^{\circ}$  F. to two fluidounces; powder the Carbonate of Magnesium with

an ounce of the Sugar and rub the Orange extract with it in a mortar, gradually adding half a pint of Water. Then filter the liquid and, having added sufficient Water to make it measure a pint, dissolve in it the remainder of the Sugar with the aid of gentle heat, and strain."

1880.

Sweet Orange Peel, deprived of the inner white layer, and cut into small pieces,	5 parts or	2½ ounces av.
Alcohol,	5 parts or	3 fl.ounces.
Precipitated Phosphate of Calcium,	1 part or	½ ounce av.
Sugar,	60 parts or	30 ounces av.
Water, a sufficient quantity to make	100 parts or	34 fl.ounces.

"Macerate the Orange Peel with the Alcohol for seven days, then express the liquid; rub this with the Precipitated Phosphate of Calcium and 15 ounces of Water gradually added; filter the mixture and pass enough Water through the filter to make the filtrate weigh 40 parts or measure 19⅔ ounces. Lastly, add the Sugar, dissolve it by agitation, without heat, and strain."

#### FENNER'S FORMULA.

As Syrup of Orange is used only for its agreeable flavor, and has no medicinal value, it seems unnecessary to go to so much trouble to make it when a simpler method will answer the purpose as well. The following formula is therefore given, which will make a fine preparation provided, only, a good quality of Oil of Orange is used:

Oil of Orange,	40 minims.
Alcohol,	2 fl.drachms.
Carbonate of Magnesium,	80 grains.
Sugar, granulated,	28 ounces av.
Water, sufficient to make	2 pints.

Dissolve the Oil of Orange in the Alcohol and rub with the Carbonate of Magnesium in a mortar, gradually adding 12 fluidounces of Water; filter the mixture and add enough Water through the filter to make 14 fluidounces; dissolve the Sugar in the filtrate by agitation or percolation and add enough Water, if necessary, to make 2 pints of the Syrup.

## SYRUPUS AURANTII FLORUM.

*Syrup of Orange Flowers.*

	1870.	1880.
Sugar, in coarse powder,	28 $\frac{3}{4}$ oz. av.	28 $\frac{3}{8}$ oz. av.
Orange Flower Water, enough to make	2 pints.	2 pints.

Dissolve the Sugar as nearly as possible by agitation in 14 fluidounces of Orange Flower Water, then add enough Orange Flower Water to make two pints of the Syrup and agitate until dissolved.

The amount of Sugar directed is a little more than will readily dissolve by agitation. The 1870 revision directs to use gentle heat. It may be readily made to dissolve by water-bath percolation without injuring its flavor.

## SYRUPUS CALCIS LACTOPHOSPHATIS.

*Syrup of Lactophosphate of Calcium (Lime).*

1880.

Precipitated Phosphate of Calcium (Lime),	22 parts or 1 ounce av.
Lactic Acid, concentrated,	33 parts or 9 $\frac{1}{2}$ fl.drachms.
Orange Flower Water,	80 parts or 3 fl.ounces.
Sugar, in coarse powder,	600 parts or 28 ounces av.
Hydrochloric Acid,	
Water of Ammonia,	
Water, each a sufficient quantity to make	1000 parts or about 2 pints.

Mix the precipitated Phosphate of Calcium with 300 parts or 13 fluidounces of cold Water and add enough Hydrochloric Acid to dissolve it. Filter the solution and add to the filtrate 1200 parts or three pints of cold Water, and Water of Ammonia until slightly in excess, which may be distinguished by the odor of Ammonia after standing a few moments. Allow the precipitate to subside, pour off the supernatant Water, pour on more Water, agitate, and repeat the operation several times until the precipitate is thoroughly washed, then pour it upon a muslin strainer, drain and press out the Water, and, at once, dissolve the magma in the Lactic Acid. Then add the Orange Flower Water and enough Water to make the solution weigh about 350 parts or measure 14 fluidounces; filter, and pass enough water



through the filter to make the filtrate weigh 400 parts or measure 17 fluidounces. Lastly, add to this the Sugar and dissolve it by agitation or percolation, without heat, and strain.

This is essentially the same as the formula published in FENNER'S FORMULARY. The addition of a fluidrachm of Hydrochloric Acid to the finished Syrup tends to prevent the precipitation which is so common in this preparation. In fact, as the Syrup is prepared by many manufacturers, it contains hardly any Lactic Acid, its place being supplied by Hydrochloric Acid, which is cheaper and makes a more stable preparation.

### SYRUPUS CALCIS.

*Syrup of Lime. Saccharated Solution of Lime.*

1880.

Lime (unslacked),	5 parts or 1 oz. av.
Sugar, in coarse powder,	30 parts or 6 ozs. av.
Water, a sufficient quantity to make	100 parts or 20 ozs. av.

“ Triturate the Lime and Sugar together in a mortar, then add the mixture to 12 ounces of boiling Water, contained in a bright copper or tinned iron vessel, and boil the mixture for five minutes, constantly stirring; dilute it with an equal volume of Water and filter it through white paper. Finally, evaporate the Syrup to 100 parts or 20 ounces avoirdupois.”

This is a new officinal, but a similar preparation has been for some time official in the British Pharmacopœia under the name of *Liquor Calcis Saccharatus*.

### SYRUPUS FERRI BROMIDI.

*Syrup of Bromide of Iron.*

1880.

Iron, in the form of fine wire	
cut into small pieces,	30 parts or 1½ oz. av.
Bromine,	75 parts or 3¾ oz. av.
Sugar, in coarse powder,	600 parts or 30 oz. av.
Distilled Water, a sufficient	
quantity to make	1000 parts or about 2 pints.

“ Introduce the Iron into a flask of thin glass of suitable capacity, add to it 200 parts or 9 fluidounces of Distilled Water, and afterwards the Bromine; shake the mixture

occasionally until the reaction ceases and the solution has acquired a green color and has lost the odor of Bromine. Place the Sugar in a porcelain capsule and filter the solution of Bromide of Iron into the Sugar; rinse the flask and the iron wire with 90 parts or 4 fluidounces of Distilled Water and pass the washings through the filter into the Sugar; stir the mixture with a porcelain or wooden spatula, heat it to the boiling point on a sand bath and, having strained the Syrup through linen into a tared bottle, add enough Distilled Water to make the product weigh 1000 parts or measure 33 fluidounces. Lastly, shake the bottle and transfer its contents to small vials, which should be well filled, corked and kept in a cool dark place."

This Syrup, which has previously been furnished chiefly by manufacturing chemists, is now made officinal. It should contain 10 per cent. by weight of Ferrous Bromide.

### SYRUPUS FERRI IODIDI.

*Syrup of Iodide of Iron.*

1870.

Iron, in the form of wire, and cut in pieces,	300 grains.
Iodine,	2 troyounces.
Distilled Water,	3 fluidounces.
Syrup, a sufficient quantity to make	20 fluidounces.

"Mix the Iodine, Iron and the Distilled Water in a flask of thin glass, shake the mixture occasionally until the reaction ceases and the solution has acquired a green color and lost the smell of Iodine; then, having introduced a pint of Syrup into a graduated bottle, heat it by means of a water-bath to 212° F., and through a small funnel, inserted in the mouth of the bottle, filter into it the solution already prepared; when this has passed close the bottle, shake it thoroughly, and, when the liquid has cooled, add sufficient Syrup to make the whole measure 20 fluidounces. Lastly, again shake the bottle and transfer its contents to 2-ounce vials, which must be well stopped."

1880.

Iron, in the form of fine wire and cut into small pieces,	25 parts or 532 grains.
Iodine,	82 parts or 4 oz. av.
Sugar, in coarse powder,	600 parts or 28 oz. av.
Distilled Water, a sufficient quantity to make	1000 parts or 2 pints.

“ Introduce the Iron into a flask of thin glass of suitable capacity, add to it 200 parts or 10 fluidounces of Distilled Water, and afterwards the Iodine ; shake the mixture occasionally until the reaction ceases and the solution has acquired a green color, and lost the odor of Iodine. Place the Sugar in a porcelain capsule, and filter the solution of Iodide of Iron into the Sugar. Rinse the flask and Iron wire with 90 parts or 4 fluidounces of Distilled Water, and pass the washings through the filter into the Sugar. Stir the mixture with a porcelain or wooden spatula, heat it to boiling on a sand bath, and having strained the syrup into a tared bottle, add enough Distilled Water to make the product weigh 1000 parts, or measure two pints. Lastly, shake the bottle, and transfer its contents to small vials which should be securely corked, and kept in a cool, dark place.”

This Syrup contains 10 per cent. of Ferrous Iodide. The 1880 preparation contains more Sugar than the 1870, and is therefore a more stable preparation.

Many methods have been proposed for preventing the decomposition and change of color of Syrup of Iodide of Iron, but if carefully made by the present officinal formula, and preserved as directed, it seldom changes. Should any change be noticeable, a very small crystal of Ferrous Sulphate will generally restore it. A so-called “Tasteless Syrup of Iodide of Iron” is furnished by manufacturing chemists, and is quite popular with many physicians. A formula for it will be found in FENNER’S FORMULARY.

## SYRUPUS FERRI QUININÆ ET STRYCHNINÆ PHOSPHATUM.

*Syrup of the Phosphates of Iron, Quinine and Strychnine.*

1880.

Phosphate of Iron,	133 parts or 200 grains.
Quinine,	133 parts or 200 grains.
Strychnine,	4 parts or 6 grains.
Phosphoric Acid,	800 parts or 2 fl.ounces.
Sugar, in coarse powder,	6000 parts or 21 ounces av.
Distilled Water, a sufficient quantity to make	10000 parts or 2 pints.

“ Add the Phosphate of Iron to 2500 parts, or  $\frac{1}{2}$  pint of Distilled Water in a tared bottle large enough to hold the finished Syrup and agitate frequently until the Salt is dissolved. Having added the Phosphoric Acid to the solution triturate the Quinine and Strychnine gradually with the

mixture in a mortar until they are dissolved, then return the solution to the bottle and add enough Distilled Water to make the liquid weigh 4000 parts or measure 12 fluidounces. Lastly, add the Sugar, dissolve it by agitation, without heat, and filter through paper. Keep the Syrup in well-stopped vials in a cool, dark place."

This new officinal is entirely unlike the unofficial preparations bearing the same name. In making it the new officinal Phosphate of Iron in scales is to be used, and the alkaloids Quinine and Strychnine; the Phosphoric Acid is also the new officinal 50 per cent. solution.

The unofficial preparation of this name is more familiarly known as Easton's Syrup.

## SYRUPUS HYPOPHOSPHITUM.

### *Syrup of Hypophosphites.*

1880.

Hypophosphite of Calcium (Lime),	35 parts or 700 grains.
Hypophosphite of Sodium (Soda),	12 parts or 240 grains.
Hypophosphite of Potas- sium,	12 parts or 240 grains.
Citric Acid,	1 part or 20 grains.
Spirit of Lemon,	2 parts or 48 minims.
Sugar, in coarse powder,	500 parts or 23 ounces av.
Water, a sufficient quan- tity to make	1000 parts or 2 pints.

"Mix the Hypophosphites and dissolve them by trituration in 350 parts, or one pint, of Water. Should there be any residue undissolved allow the solution to settle, pour off nearly all of it and add the Citric Acid so that it may be dissolved. Then, having mixed the liquids, add the Spirit of Lemon and filter through paper, adding enough Water through the filter to make the whole weigh 500 parts or measure 21 fluid ounces. In this liquid dissolve the Sugar by agitation or percolation, without heat, and strain. Keep in well-stopped bottles."

This Syrup has been in use for many years, under the general title of Syrup of Hypophosphites Compound, or Churchill's Syrup. The title "Syrup of Hypophosphites" seems insufficient, as there are so many combinations called by that general name. Physicians prescribing Syrups of Hypophosphites should state the combination they desire

by designating the Hypophosphite Salts, otherwise much confusion will result.

In the officinal formula Citric Acid is used instead of Hypophosphorous Acid, which is usually directed in unofficial formulæ, and which seems more appropriate in the preparation. Formulæ for the various combinations of Hypophosphites in syrups will be found in FENNER'S FORMULARY.

## SYRUPUS HYPOPHOSPHITUM CUM FERRO.

*Syrup of Hypophosphites with Iron.*

1880.

Lactate of Iron,	1 part or 96 grains.
Syrup of Hypophosphites,	99 parts or 1 pint.

“Dissolve the Lactate of Iron in the Syrup by trituration, and keep the Syrup in well-stopped bottles.”

This Syrup is also a new officinal, being designed to take the place of the popular unofficial “Syrup of Hypophosphites of Lime, Iron, Soda, and Potassa.”

Lactate of Iron is made to take the place of freshly precipitated Hypophosphite of Iron, which has usually been directed in the unofficial formulæ. It is greatly to be questioned if the Lactate of Iron is as good as some other salt of Iron in this preparation.

## SYRUPUS FERRI PHOSPHATIS, *Br.*

*Syrup of Phosphate of Iron.*

This Syrup, which is official in the British Pharmacopœia, is made by dissolving freshly precipitated Phosphate of Iron in diluted Phosphoric Acid, and then dissolving Sugar in the solution to make a Syrup. It may readily be made from the new officinal Phosphate of Iron in scales, as follows :

Phosphate of Iron, in scales,	128 grains.
Sugar, in coarse powder,	14 ounces av.
Water, enough to make	a pint.

Dissolve the Phosphate of Iron in 6 fluidounces of Water and add the Sugar ; then add enough Water to make the measure a pint and agitate occasionally until the Sugar is dissolved.

## SYRUPUS IPECACUANHÆ.

*Syrup of Ipecac.*

	1870.	1880.
	By measure.	By weight.
Fluid Extract of Ipecac,	2 fl.ounces.	5 parts.
Syrup,	30 fl.ounces.	95 parts.
Mix them.		

The 1880 formula, if made with the officinal Fluid Extract of Ipecac, requires about 2 fluidounces to 29 fluidounces of Syrup; but with the Fluid Extract of 1870 a less quantity would be required on account of its greater specific gravity. The present officinal Fluid Extract will mix with syrup and make a transparent preparation, because, by the process of preparing it the resinous matter is removed; but the 1870 Fluid Extract and most manufacturers will make a "muddy" preparation because of the precipitation of the resin of the Fluid Extract which is held in solution.

The druggist may readily ascertain if his fluid extract contains resin by adding a few drops of it to water. If it contains resin it will have a muddy or cloudy appearance, if free from it the result will be a clear solution. If it contains resin, the syrup should be made as follows:

Fluid Extract of Ipecac,	2 fluidounces.
Water,	13 fluidounces.
Sugar,	28 ounces av.

Mix the Extract with the Water and half of the Sugar, and allow to stand until the Sugar is dissolved, then filter, add the remainder of the Sugar and dissolve by percolation or gentle heat, adding water if necessary to make two pints.

If it is desired to make the Syrup of Ipecac from the root instead of the fluid extract, it may be made by the following formula.

Ipecac, in moderately fine powder,	8 ounces av.
Alcohol,	4 fl.ounces.
Sugar, in coarse powder,	7 pounds av.
Water, a sufficient quantity.	

Moisten the Ipecac with the Alcohol and pack moderately in the water-bath percolator; pour upon it 4 ounces of Water and set in a warm place for 24 hours; then heat very moderately and after one hour begin to percolate, adding Water to the drug and continuing the heat and percolation until two pints have passed. Evaporate this by means of a

water-bath — boiling it for a few moments — to a pint, and when cool filter, add to the filtrate enough Water to make 60 fluid ounces and dissolve the Sugar in the liquid by gentle heat, or water-bath percolation. The product should be one gallon of Syrup. Lastly, while still warm, put it in half-pint well-stopped bottles, and set away in a cool place.

Syrup of Ipecac made and preserved in this manner will keep for years.

### SYRUPUS KRAMERIÆ.

*Syrup of Krameria (Rhatany).*

	1870.		1880.
Rhatany,	12 troyounces.	Fluid Extract Krameria,	12 fl.ounces.
Sugar,	30 troyounces.	Syrup,	20 fl.ounces.
Water,	a sufficient quantity.	Mix them.	

(See directions for making U. S. 1870.)

As this Syrup is so little used it is much more convenient to prepare it from the Fluid Extract as required, 3 parts or fluidrachms of the Fluid Extract to 5 parts or fluidrachms of Syrup makes the preparation in the proper proportion.

### SYRUPUS LACTUCARII.

*Syrup of Lactucarium.*

	1870.		
Lactucarium,			480 grains.
Syrup,			14 fl.ounces.
Diluted Alcohol,	sufficient.		

“Rub the Lactucarium with enough diluted Alcohol, gradually added, to bring it to a syrupy consistence. Then introduce it into a conical percolator, and, having carefully covered the surface with a piece of muslin, gradually pour diluted Alcohol upon it until half a pint of tincture has passed. Evaporate this portion by means of a water-bath, at a temperature not exceeding 160° F. to two fluidounces, mix it with Syrup, previously heated, and strain while hot.”

1880.

Fluid Extract of Lactucarium,	5 parts or 2 fl.ounces.
Syrup,	95 parts or 29 fl.ounces.
Mix them.	



The 1870 preparation was never very satisfactory, on account of its turbidity, but the present formula, if the official Fluid Extract of Lactucarium is used, makes a nice, clear preparation.

### AUBERGIER'S SYRUP OF LACTUCARIUM.

This preparation is much used in Europe and is occasionally called for in this country. Prof. Proctor, in the A. J. P. 1866, page 290, furnished the following formula for its preparation.

Lactucarium (German),	$\frac{1}{2}$ ounce av.
Sugar, granulated,	1 ounce av.
Syrup,	$4\frac{1}{2}$ pints.
Citric Acid, in powder,	60 grains.
Orange Flower Water,	4 fluidounces.
Diluted Alcohol,	
Water, each, a sufficient quantity.	

“Triturate the Lactucarium with the Sugar, until reduced to powder, put it into a funnel-shaped percolator, pour on Diluted Alcohol until the Lactucarium is nearly exhausted, or until 10 fluidounces have passed, evaporate to 2 fluidounces and add it to the Syrup previously heated by boiling, and mix. Continue the ebullition slowly until the whole measures 4 pints and 6 fluidounces. Then add the Citric Acid and strain, and, lastly, when nearly cool, the Orange Flower Water, and mix them.”

This preparation is much inferior in strength to either of the official preparations.

### SYRUPUS LIMONIS.

*Syrup of Lemon.*

1870.

Lemon Juice, recently expressed and strained,	$\frac{1}{2}$ pint.
Sugar,	$26\frac{1}{3}$ ounces av.
Water,	$\frac{1}{2}$ pint.

“Mix the Lemon Juice and Water, and having added the Sugar to the mixture, dissolve it with the aid of gentle heat and strain the solution while hot.”

1880.

Lemon Juice, recently expressed and strained,	17 fl.ounces.
Lemon Peel, fresh,	1 ounce av.
Sugar in coarse powder,	28 ounces av.
Water enough to make two pints.	

“Heat the Lemon Juice to the boiling point, then add the Lemon Peel and let the whole stand closely covered until cold, filter, add enough Water through the filter to make the filtrate measure 17 fluidounces, dissolve the Sugar in the filtered liquid by agitation, without heat, and strain.”

Syrup of Lemon will not keep long during the summer months. It is better preserved if put up hot, in small bottles, and kept in a cool place.

## SYRUPUS PAPAVERIS.

*Syrup of Poppies.*

MADE BY WATER-BATH PERCOLATION.

Syrup of Poppies is officinal in the British Pharmacopœia, and is frequently called for in this country. The following improved formula is therefore given :

Poppy Capsules, dried, freed from seeds, and coarsely powdered,	16 ounces av.
Sugar, granulated,	21 ounces av.
Water, a sufficient quantity.	

Moisten the Capsules with Water, and pack very moderately in the water-bath percolator. Pour upon them a pint of Water and set in a warm place for 24 hours, then heat moderately and after one hour begin to percolate, adding Water to the drug and continuing the heat and percolation until  $2\frac{1}{2}$  pints have passed. Evaporate the percolate by means of a water-bath to a pint, and while still warm dissolve in it the Sugar, and strain. Put in small bottles well stopped and keep in a cool place.

## SYRUPUS PICIS LIQUIDÆ.

*Syrup of Tar.*

1880.

Tar,	6 parts, or $2\frac{2}{3}$ ounces av.
Cold Water,	12 parts, or 5 fl.ounces.
Boiling Distilled Water,	50 parts, or 22 fl.ounces.
Sugar, in coarse powder,	60 parts, or 26 ounces av.

“Upon the Tar contained in a suitable vessel; pour the Cold Water and stir the mixture frequently during 24 hours; then pour off the water and throw it away. Pour the Boiling Distilled Water upon the residue, stir the mixture briskly for fifteen minutes and set it aside for 36 hours, stirring occasionally. Decant the solution and filter. Lastly, in forty parts, or 17 fluidounces of filtered solution, dissolve the Sugar by agitation, without heat.”

MADE BY WATER-BATH PERCOLATION.

*Fenner's Formula.*

Tar,	2 ounces av.
Cold Water,	4 fl.ounces.
Pine Sawdust,	12 ounces av.
Sugar, granulated,	28 ounces av.
Boiling Water, a sufficient quantity.	

Pour the Cold Water upon the Tar and stir the mixture occasionally during 24 hours; then pour off the water and mix the Tar intimately with the Pine Sawdust and pack firmly in the water-bath percolator. Pour upon it a pint of Boiling Water and keep at a moderate heat for 2 hours, then pour on more Boiling Water and begin to percolate adding water and continuing the heat and percolation until 20 ounces have passed. Allow the percolate to stand until cool, then filter off a pint and dissolve the Sugar in the filtrate, by agitation or percolation.

SYRUPUS PRUNI VIRGINIANÆ.

*Syrup of Wild Cherry.*

1870.	1880.
Wild Cherry, in coarse powder, 5 tr.ounces.	Wild Cherry, in No. 20 powder, 5½ oz. av.
Sugar, in coarse powder, 28 tr.ounces.	Sugar, in coarse powder, 28 oz. av.
Water, a suffi- cient quantity, to make, 2 pints.	Glycerin, 2 fl.oz.
Make as below, except the Glycerin.	Water, a sufficient quantity to make about 2 pints.

“Moisten the Wild Cherry thoroughly with Water and macerate for 24 hours in a close vessel, then pack it firmly in a cylindrical glass percolator and gradually pour Water upon it until 15 ounces of percolate are obtained. Dissolve

the Sugar in the liquid by agitation without heat, add the Glycerin and strain." 1880.

MADE BY WATER-BATH PERCOLATION.

Wild Cherry, in No. 20 powder,	5½ ounces av.
Sugar, granulated,	28 ounces av.
Glycerin,	2 fl.ounces.
Water enough to make	2 pints.

Moisten the Wild Cherry with six ounces of Water, and allow it to stand in a warm place for 24 hours in a covered vessel; then pack in the water-bath percolator, pour a pint of Water upon it and heat very moderately, not over 100 F., for one hour, then begin to percolate, and continue the heat and percolation, adding Water to the drug, if necessary, until 14 fluidounces have passed, dissolve the Sugar in the percolate while still warm, and add the Glycerin. Keep in small, well stopped bottles in a cool place. Prepared and preserved in this manner this Syrup will keep through the summer.

If the heat is kept within the limit mentioned, a much better preparation will result than when made by the cold process; but too high a degree of heat vaporizes the Hydrocyanic Acid which has been developed by moistening the drug, and injures the preparation.

SYRUPUS RHAMNI, *Br.*

*Syrup of Buckthorn.*

This Syrup is officinal in the British and German Pharmacopœias, and is quite frequently called for in this country. It is made from the fresh juice of Buckthorn Berries, which is not obtainable in this country. We, therefore, have to depend upon the imported syrup which can be obtained of wholesale druggists. Fluid Extract and Elixir of Buckthorn made from the Bark or Berries are now extensively used, and have nearly superseded, in this country, the Syrup made from the fresh juice.

SYRUPUS RHEI.

*Syrup of Rhubarb.*

1870.

Fluid Extract of Rhubarb,	3 fluidounces.
Syrup,	29 fluidounces.
Mix them thoroughly.	

1880.

Rhubarb, sliced,	90 parts or 3 $\frac{7}{8}$ ounces av.
Cinnamon, bruised,	18 parts or 340 grains.
Carbonate of Potassium,	6 parts or 112 grains.
Sugar, in coarse powder,	600 parts or 27 ounces av.
Water, a sufficient quantity to make	1,000 parts or 2 pints.

“ Mix the Rhubarb, Cinnamon and Carbonate of Potassium with 420 parts or 20 fl.ounces of Water, and macerate the mixture in a glass or porcelain vessel for twelve hours. Then strain and filter, adding through the dregs, if necessary, enough Water to make the filtered liquid weigh 400 parts or measure a pint. Lastly, add the Sugar, dissolve it by agitation, without heat, and strain.

## MADE BY WATER-BATH PERCOLATION.

Rhubarb, in No. 20 powder,	4 ounces.
Cinnamon, in No. 20 powder,	360 grains.
Carbonate of Potassium,	120 grains.
Sugar, granulated,	28 ounces av.
Water, a sufficient quantity.	

Mix the Rhubarb and Cinnamon ; dissolve the Carbonate of Potassium in 4 ounces of Water, and, having moistened the drugs with the solution, set in a warm place in a closed vessel for 12 hours, then pack moderately in the water-bath percolator, pour upon them a pint of Water and heat very moderately for one hour ; then begin to percolate, adding Water to the drugs if necessary, and continue the heat and percolation until a pint of the percolate has passed ; while still warm dissolve the Sugar in the liquid by agitation, and filter.

This will be found much superior to the U. S. process for making this Syrup.

## SYRUPUS RHEI AROMATICUS.

*Aromatic Syrup of Rhubarb.*

1870.

Rhubarb, in No. 50 powder,	600 grains.
Cloves, in No. 50 powder,	60 grains.
Cinnamon, in No. 60 powder,	60 grains.
Nutmeg, in No. 50 powder,	60 grains.
Syrup,	3 pints.
Diluted Alcohol, a sufficient quantity.	

“Mix the powders, and, having moistened the mixture with a fluidounce of Diluted Alcohol, introduce it into a conical percolator and pour Diluted Alcohol upon it until a half pint of tincture has passed ; add this to the Syrup, previously heated, and mix them thoroughly.”

1880.

Aromatic Tincture of Rhubarb,	10 parts, or 2 fl.ounces.
Syrup,	90 parts, or 14 fl.ounces.

“Mix the Aromatic Tincture of Rhubarb with the Syrup.”

As the Aromatic Tincture of Rhubarb is the same as is produced by percolating the drugs with Diluted Alcohol in the 1870 formula, the resultant preparation is very nearly the same in both cases. A formula for preparing this Tincture by water-bath percolation will be found under the head of Tinctures.

## SYRUPUS ROSÆ.

*Syrup of Rose.*

1880.

This Syrup, in the 1870 Pharmacopœia, was called *Syrupus Rosæ Gallicæ*, or *Syrup of Red Rose*. It was prepared by percolating 2 troyounces of Red Rose petals with Diluted Alcohol, reserving the first fluidounce, evaporating the next 5 ounces that passed to 1½ ounces and mixing with 7 ounces of Water ; 18 troyounces of Sugar was then dissolved in the liquid by gentle heat, and when cold the first one ounce reserved was added and thoroughly mixed.

The present officinal formula is as follows :

Fluid Extract of Rose,	10 parts, or 2 fl.ounces.
Syrup,	90 parts, or 14 fl.ounces.
Mix them.	

## SYRUPUS RUBI.

*Syrup of Rubus (Blackberry).*

The formulæ for this Syrup are essentially the same in both editions.

Fluid Extract of Rubus (Blackberry),	4 fl.ounces.
Syrup,	12 fl.ounces.
Mix them.	

The fluid extract designated is made from Blackberry

Root. A Syrup of Blackberry for flavoring Soda Water and for other purposes is also made from the fruit.

## SYRUPUS RUBI IDÆI.

### *Syrup of Raspberry.*

1880.

Fresh ripe Raspberries, any convenient quantity.  
Sugar, a sufficient quantity.

“Reduce the Raspberries to a pulp and let it stand at rest for three days. Separate the juice by pressing and set it aside until it has completely fermented and become clear, and then filter. To each pint of the filtered juice then add 25 ounces av. of Sugar, heat to boiling, avoiding the use of tinned vessels, and strain. Keep the Syrup in well-stopped bottles in a cool, dark place.”

This is evidently given as a representative formula for Fruit Syrups, and although it makes a good Syrup it does not retain the natural flavor of the fruit as does a Syrup made from the juice without being fermented. A formula for preparing Fruit Syrups without fermentation was given in a supplement to FENNER'S FORMULARY.

## SYRUPUS SARSAPARILLA COMPOSITUS.

### *Compound Syrup of Sarsaparilla.*

1870.

1880.

Sarsaparilla,	24 tr.ounces.	Sarsaparilla,	25 ounces av.
Guaiacum W'd,	3 tr.ounces.	Guaiacum	
Pale Rose,	2 tr.ounces.	Wood,	3 $\frac{1}{3}$ ounces av.
Liquorice Root,	2 tr.ounces.	Pale Rose,	2 ounces av.
Senna,	2 tr.ounces.	Liquorice R't,	2 ounces av.
Oil of Sassa-		Senna,	2 ounces av.
fras,	5 minims.	Sassafras,	1 ounce av.
Oil of Anise,	5 minims.	Anise,	1 ounce av.
Oil of Gaul-		Gaultheria,	1 ounce av.
theria,	3 minims.	Sugar,	100 ounces av.
Sugar,	96 tr. ounces.	Water,	
Water,	1 pint.	Diluted Alcohol,	each, suf-
Diluted Alcohol,	sufficient.		ficient.

(The drugs should all be about No. 30 powder.)

“Mix the solid ingredients except the Sugar with three pints of Diluted Alcohol and macerate the mixture for



forty-eight hours; then transfer it to a cylindrical percolator, pack it firmly, and gradually pour Diluted Alcohol upon it until 6 pints of tincture have been obtained. Evaporate this portion by means of a water-bath, to 3 pints, add a pint of Water, and filter, adding enough Water through the filter to make 4 pints. Lastly, add the Sugar, dissolve it by agitation, without heat, and strain." 1880.

MADE BY WATER-BATH PERCOLATION.

Sarsaparilla, in No. 30 powder,	25	ounces av.
Guaiacum Wood, "	3	ounces av.
Pale Rose, "	2	ounces av.
Liquorice Root, "	2	ounces av.
Senna, "	2	ounces av.
Sassafras, "	1	ounce av.
Anise, "	1	ounce av.
Sarsaparilla Flavoring,	$\frac{1}{2}$	fl.ounce.
Sugar, in coarse powder,	$6\frac{1}{2}$	pounds av.
Water,		
Diluted Alcohol, each, a sufficient quantity.		

Mix the solid ingredients, except the Sugar, and moisten them with  $1\frac{1}{2}$  pints of Diluted Alcohol, set in a covered vessel in a warm place for 12 hours, then transfer to the water-bath percolator, pack moderately, pour upon them 2 pints of Diluted Alcohol and set in a warm place for 24 hours; then heat moderately, and after one hour begin to percolate, adding Diluted Alcohol to the drugs and continuing the heat and percolation until 6 pints of the tincture have passed. Distill off three pints of Alcohol, by means of the water-bath and still, add a pint of Water to the residue and filter, adding enough Water through the filter to make the measure 4 pints. Mix the Sarsaparilla Flavoring with 4 ounces of the Sugar and dissolve this with the remainder of the Sugar in the liquid by percolation or agitation.

SARSAPARILLA FLAVORING, or Essence of Sarsaparilla, is the same as is used for flavoring Soda Water Syrups, and is made as follows:

Oil of Wintergreen,	4	fluidrachms.
Oil of Sassafras,	3	fluidrachms.
Oil of Anise,	1	fluidrachm.
Cologne Spirit,	12	fluidounces.
Water,	4	fluidounces.

Mix, and, if necessary, filter through a little Carbonate of Magnesium.

## SYRUPUS SCILLÆ.

*Syrup of Squill.*

The only noticeable difference between the 1870 and 1880 preparation is that in the latter the Vinegar of Squill, from which it is prepared, is weaker than in the former revision. The present formula is as follows:

Vinegar of Squill,	40 parts or a pint.
Sugar, in coarse powder,	60 parts or 26 ounces av.
Water, sufficient to make	100 parts or 2 pints.

“Heat the Vinegar of Squill to the boiling point in a glass or porcelain vessel and filter while hot, adding enough Water through the filter to make the filtrate weigh 40 parts or measure a pint; add the Sugar, dissolve it by agitation, without heat, and strain.”

## SYRUPUS SCILLÆ COMPOSITUS.

*Compound Syrup of Squill (Hive Syrup.)*

1870.		1880.	
Squill,	3 oz. av.	Squill,	2½ oz. av.
Seneka,	3 oz. av.	Senega,	2½ oz. av.
Tartrate of Antimony and Potassium,	32 grains.	Tartrate of Antimony and Potassium,	28 grains.
Sugar,	30 oz. av.	Sugar,	26 oz. av.
Diluted Alcohol,		Precipitated Phosphate of Calcium,	90 grains.
Water, each, sufficient to make	2 pints.	Diluted Alcohol,	
(See directions, 1870.)		Water, each sufficient to make	2 pints.

The drugs should be in No. 30 powder.

“Mix the Squill and Senega, and, having moistened the mixture with half a pint of Diluted Alcohol, macerate for an hour, then transfer the mixture to a conical percolator and gradually pour upon it Diluted Alcohol until one and a half pints of tincture are obtained. Boil this portion for a few minutes and then evaporate it by means of a water-bath to half a pint, having added three ounces of boiling Water, triturate the mixture with the precipitated Phosphate of Calcium, and add, through the filter, enough warm Water to

make the whole measure one pint. In this dissolve the Sugar by agitation, without heat, and strain. Lastly, dissolve the Tartrate of Antimony and Potassium in a fluid-ounce of hot Water, and mix the solution thoroughly with the Syrup." 1880.

MADE BY WATER-BATH PERCOLATION.

Squill, in No. 20 powder,	2 1/2 ounces av.
Senega, in No. 30 powder,	2 1/2 ounces av.
Tartrate of Antimony and Potas- sium,	32 grains.
Sugar,	28 ounces av.
Diluted Alcohol,	
Water, each, sufficient.	

Mix the Squill and Senega, moisten with 5 fluidounces of Diluted Alcohol, and set in a covered vessel for 12 hours; then transfer to the water-bath percolator, pack very moderately, pour upon it a pint of Diluted Alcohol, and set in a warm place for 24 hours; then heat very moderately, and after one hour, begin to percolate, adding Water to the drug and continuing the heat and percolation until a pint and a half of the percolate has passed. Distill off 12 fluidounces of Alcohol, and boil the residue for 15 minutes; then evaporate it to half a pint and filter, adding enough Water through the filter to make 15 fluidounces. In this dissolve the sugar by percolation or agitation, and having dissolved the Tartrate of Antimony and Potassium in an ounce of hot Water, add to the syrup and mix thoroughly.

SYRUPUS SENEGÆ.

*Syrup of Senega—1880. Syrup of Seneka—1870.*

1870.

Seneka, in No. 50 powder,	4 troyounces.
Sugar, in coarse powder,	15 troyounces.
Diluted Alcohol,	2 pints.

"Moisten the Seneka with two fluidounces of Diluted Alcohol; then transfer it to a conical percolator, and gradually pour on it the remainder of the Diluted Alcohol. When the Tincture has ceased to pass, evaporate it, by means of a water-bath, at a temperature not exceeding 160° F., to half a pint; then filter, and, having added the Sugar, dissolve it with the aid of a gentle heat and strain the solution while hot."

1880.

Fluid Extract of Senega,	4 fluidounces.
Water of Ammonia,	45 minims.
Sugar in coarse powder,	28 ounces av.
Water, sufficient to make	2 pints.

“Mix the Fluid Extract with 12 ounces of Water, add the Water of Ammonia, shake the mixture well, and let it stand for a few hours; then filter, adding enough Water through the filter to make 17 fluidounces. To the filtered solution add the Sugar and dissolve by agitation or percolation, without heat, and strain.”

## MADE BY WATER-BATH PERCOLATION.

Senega, in No. 40 powder,	4 ounces av.
Diluted Alcohol,	1 pint.
Water of Ammonia,	1 fl.drachm.
Sugar,	28 ounces av.
Water, a sufficient quantity.	

Moisten the drug with 4 fluidounces of Diluted Alcohol and let stand for 12 hours, then pack moderately in the water-bath percolator; pour upon it the remainder (12 fluid-ounces) of the Diluted Alcohol and set in a warm place for one day; then heat very moderately, and after one hour begin to percolate, adding Water to the drug, and continuing the heat and percolation until a pint of the tincture has passed; boil this for 15 minutes to coagulate the albumen and starchy matter, continue the evaporation by gentle heat until the liquid is reduced to half a pint, and filter through muslin, without pressure, adding a little Water through the filter to preserve the measure. To the filtered liquid add 8 ounces of Water and the Water of Ammonia, and, after standing 3 or 4 hours, filter through paper and dissolve the Sugar in the filtrate by agitation or percolation.

## SYRUPUS SENNÆ.

*Syrup of Senna.*

1880.

Senna, bruised,	33 parts or 16 ounces av.
Sugar, in coarse powder,	60 parts or 29 ounces av.
Alcohol,	4 parts or 2 fl.ounces.
Oil of Coriander,	8 minims.
Water, a sufficient quantity.	

“Digest the Senna in five pints of Water, at a temperature not exceeding  $50^{\circ}$  C. ( $122^{\circ}$  F.), for 24 hours, express and strain the liquid; digest the mass with 2 pints of Water, at the same temperature, for 24 hours, express and strain as before, mix the strained liquids and evaporate the mixture to 15 fluidounces. When cold add the Alcohol, previously mixed with the Oil of Coriander, and filter through paper, adding, through the filter, enough Water to make the whole measure 17 fluidounces. Then add the Sugar, dissolve it by agitation or percolation, and strain.”

As this Syrup is about one-half the strength of the Fluid Extract, it seems an unnecessary officinal. It may be made extemporaneously by mixing equal measures of Fluid Extract of Senna and Syrup.

It may also be made by water-bath percolation.

## SYRUPUS TOLUTANUS.

### *Syrup of Tolu.*

1870.

Tincture of Tolu,	2	fluidounces.
Carbonate of Magnesium,	120	grains.
Sugar, in coarse powder,	28½	ounces av.
Water,	1	pint.

“Rub the Tincture of Tolu first with the Carbonate of Magnesium and 2 ounces of the Sugar and then with the Water, gradually added, and filter. To the filtered liquid add the remainder of the Sugar, and, having dissolved it with the aid of a gentle heat, strain the solution while hot.”

1880.

Balsam of Tolu,	4 parts or	1¾ oz. av.
Sugar, in coarse powder,	65 parts or	28 oz. av.
Distilled Water,	a sufficient quantity.	

“Mix the Sugar with 13 fluidounces of Distilled Water, add the Balsam and digest the whole in a covered vessel, at a temperature not exceeding  $82^{\circ}$  C. ( $180^{\circ}$  F.), for 2 hours. When cold, strain through a well-wetted muslin strainer, adding enough Water through the strainer to make the Syrup measure 2 pints, and mix thoroughly.”

The formula of 1870 is much to be preferred, both on account of the manner of making and the quality and appearance of the finished Syrup. Few druggists will think

enough of the new formula to follow its directions more than once.

The 1870 formula may be made without the use of heat, by percolation or agitation.

## SYRUPUS ZINGIBERIS.

### *Syrup of Ginger.*

1870.

Fluid Extract of Ginger,	3 fluidrachms.
Carbonate of Magnesium,	60 grains.
Sugar, in coarse powder,	26 ounces av.
Water,	1 pint.

“Rub the Fluid Extract of Ginger with the Carbonate of Magnesium and 2 ounces of the Sugar, and then with the Water, gradually added, and filter. To the filtrate add the remainder of the Sugar, and, having dissolved it with the aid of gentle heat, strain the solution while hot.”

1880.

Fluid Extract of Ginger,	2 parts or 1 fl.ounce.
Sugar in coarse powder,	65 parts or 30 ounces av.
Water, a sufficient quantity.	

“Rub the Fluid Extract of Ginger with 12 ounces of Sugar and expose the mixture to a heat not exceeding 60° C. (140° F.) until all the Alcohol has evaporated. Then mix the residue thoroughly by agitation with 15 ounces of Water and filter the liquid, adding, through the filter enough Water to make the whole measure 22 fluidounces. Finally add the remainder of the Sugar, dissolve it by agitation, without heat, and filter.”

As with Syrup of Tolu the 1880 formula is no improvement over the 1870, in fact makes a much less desirable preparation and takes more time and trouble.

The 1870 formula may be made without the use of heat, by percolation or agitation.

## TINCTURÆ—TINCTURES.

Tinctures are the most used of any class of Pharmacopœia preparations, and it is highly important that they should be well made, of the best material, and up to the highest standard of strength.

The directions for making Tinctures in the new Pharmacopœia are much more definite than in the 1870 revision. Many Tinctures that were formerly prepared by percolation are now, very sensibly, prepared by maceration, and in most of the present formulæ, where percolation is employed, it is directed to moisten the drug and macerate it for 24 hours before packing in the percolator. This is a very important direction, for, in following the former authority, it was often the case that inexperienced druggists would pack the drugs in the percolator and begin percolating at once, having a tincture finished in a few hours, which would, of course, only partly represent the medicinal value of the drug. By moistening the drug and allowing it to stand before packing, it has an opportunity to "swell" and gives time for the medicinal properties to be dissolved or loosened, and it is therefore in a fit condition for the process of percolation.

Of all processes, however, which have been proposed for making Tinctures, none will be found so valuable and economical as the process of water-bath percolation, which, by the influence of heat, dissolves and removes with the percolate, all the medicinal value of the drug. The formulæ that are given for making Tinctures by water-bath percolation, mostly conform to the standard of strength of the 1880 Pharmacopœia; but, if it is desired to make them of the 1870 strength, it is only necessary to use the proportions of the 1870 formulæ instead of the 1880, in the formulæ for making by water-bath percolation.

The change in the new Pharmacopœia to parts by weight, instead of fluid measure, as formerly, causes much inconvenience to American druggists who are not accustomed to preparing them in this manner. This is especially the case



with Tinctures, owing to their varying specific gravity and the varying amount of extractive matter which even the same drug will yield by different methods of exhaustion. In comparing the formulæ for Tinctures of the 1870 with the 1880 Pharmacopœia the difference in the standard strength of Alcohol (1870—sp. gr. 0,835, 1880—sp. gr. 0,820) must not be forgotten. Nor must it be overlooked that the present standard for Diluted Alcohol (sp. gr. 0,928) is about 13 per cent. stronger than that of 1870 (sp. gr. 0,941). These differences make, of course, corresponding differences in all the Tinctures which are not represented in comparing the formulæ. But the chief difference is the change in the proportions of the medicinal ingredients in nearly every formula, which varies from 5 to 300 per cent. This wholesale change in preparations so familiar and so frequently used as Tinctures seems entirely unnecessary and uncalled for, and will probably be but slowly adopted by the mass of druggists and physicians.

In the new Pharmacopœia 21 new Tinctures have been added and 7 omitted that were officinal in the 1870 revision; they are as follows:

## ADDED.

Tinctura Arnicæ Radicis, . . . . .	Tincture of Arnica Root.
" Aurantii Dulcis, . . . . .	" " Sweet Orange Peel.
" Bryoniæ, . . . . .	" " Bryonia.
" Calendulæ, . . . . .	" " Calendula (Marigold).
" Chiratæ, . . . . .	" " Chirata.
" Cimicifugæ, . . . . .	" " Cimicifuga (Black Cohosh).
" Croci, . . . . .	" " Saffron.
" Ferri Acetatis, . . . . .	" " Acetate of Iron.
" Gelsemii, . . . . .	" " Gelsemium.
" Hydrastis, . . . . .	" " Hydrastis (Golden Seal).
" Ignatiæ, . . . . .	" " Ignatia.
" Ipecacuanhæ et Opii, . . . . .	" " Ipecac and Opium.
" Matico, . . . . .	" " Matico.
" Moschi, . . . . .	" " Musk.
" Physostigmatis, . . . . .	" " Calabar Bean.
" Pyrethri, . . . . .	" " Pellitory.
" Rhei Aromaticus, . . . . .	" " Rhubarb, Aromatic.
" " Dulcis, . . . . .	" " " Sweet.
" Saponis Viridis, . . . . .	" " Green Soap.
" Sumbul, . . . . .	" " Sumbul.
" Vanillæ, . . . . .	" " Vanilla.

## OMITTED.

Tinctura Castorei, . . . . .	Tincture of Castor.
" Hellebori, . . . . .	" " Black Hellebore.
" Iodinii Composita, . . . .	" " Iodine, Compound.
" Jalapæ, . . . . .	" " Jalap.
" Lupulinæ, . . . . .	" " Lupulin.
" Opii Acetata, . . . . .	" " Opium, Acetated.
" Rhei et Sennæ, . . . . .	" " Rhubarb and Senna.

## TRANSFERRED.

1870.

1880.

Spiritus Lavendulæ Composita, . . Tinctura Lavendulæ Composita.

## TINCTURA ACONITI.

*Tincture of Aconite.*

1870.

Aconite Root, 13 $\frac{1}{6}$  ozs. av.  
 Alcohol, sufficient  
 to make 2 pints.

" Moisten the powder with six fluidounces of Alcohol, pack it firmly in a cylindrical percolator and gradually pour Alcohol upon it until two pints of tincture are obtained."

1880.

Aconite (Root) 11 ozs. av  
 Tartaric Acid, 48 grains.  
 Alcohol, sufficient  
 to make 2 pints.

" Moisten the powder with six fluidounces of Alcohol in which the Tartaric Acid has previously been dissolved, and macerate for twenty-four hours; then pack it firmly in a cylindrical glass percolator and gradually pour Alcohol upon it until two pints of Tincture are obtained."

As tincture of Aconite Leaves is also kept in most drug stores, and frequently prescribed or called for, although not official, much care must be used to prevent mistakes that might occur from misunderstanding as to the two preparations.

## MADE BY WATER-BATH PERCOLATION.

(1880 U. S. P. Standard.)

Aconite Root in No. 60 powder,	11 ounces av.
Tartaric Acid,	48 grains.
Alcohol, sufficient to make	2 pints.

Moisten the Aconite with six ounces of Alcohol and pack

it very firmly in the water-bath percolator. Pour upon it a pint of Alcohol and set in a warm place for four days, then heat moderately and after one hour begin to percolate slowly, adding Alcohol to the drug and continuing the heat and percolation until two pints have passed. Dissolve the Tartaric Acid in the Tincture and filter.

The Alcohol remaining in the drug after percolation may be recovered by distillation, and used in liniments, etc.

## TINCTURA ALOES.

### *Tincture of Aloes.*

1870.	1880.
Socotrine Aloes, 480 grains.	Purified Aloes, $3\frac{1}{4}$ ounces av.
Liquorice (Ext.), 3 tr.ozs.	Extract of Liquorice,
Alcohol, 8 fl.ozs.	$3\frac{1}{4}$ ounces av.
Distilled Water, 24 fl.ozs.	Diluted Alcohol,
“Macerate for seven days and filter through paper.”	sufficient to make 2 pints.

“Mix the powders with a pint and a half of Diluted Alcohol, and macerate the mixture for seven days in a closed vessel; then filter through paper, adding through the filter enough Diluted Alcohol to make the Tincture measure two pints.” 1880.

It will be observed that the 1880 preparation contains nearly three times as much Aloes as the 1870, and that it is also made with a much larger proportion of Alcohol.

### MADE BY WATER-BATH PERCOLATION.

(1880 U. S. P. Standard.)

Purified Aloes, in moderately fine powder,	$3\frac{1}{4}$ ounces av.
Extract of Liquorice, in moderately fine powder,	$3\frac{1}{4}$ ounces av.
Diluted Alcohol, sufficient to make	2 pints.

Mix the drugs and agitate them with 28 fluidounces of Diluted Alcohol; cut a piece of burlap or coarse cloth and place in the bottom, on the perforated diaphragm of the water-bath percolator. Pour the mixture into the percolator and let it stand in a warm place for two days; then heat moderately, and after one hour begin to percolate, adding Diluted Alcohol through the percolator to make two pints

of the Tincture. A little sediment will be found at the bottom after the Tincture has cooled, as the warm Diluted Alcohol dissolves a little more of the drugs than it will retain in solution. Forty grains of Carbonate of Potassium then added to the Tincture will nearly dissolve the precipitate and will greatly improve the preparation.

## TINCTURA ALOES ET MYRRHÆ.

*Tincture of Aloes and Myrrh (Elixir Proprietatis.)*

1870.

Socotrine Aloes, 3 tr.ounces.  
Myrrh, 3 tr.ounces.  
Alcohol, sufficient  
to make 2 pints.

“Mix the powders and having moistened the mixture with two fluidounces of Alcohol, pack it in a conical percolator and gradually pour Alcohol upon it until two pints of tincture are obtained.”

1880.

Purified Aloes,  $2\frac{7}{8}$  ounces av.  
Myrrh,  $2\frac{7}{8}$  ounces av.  
Alcohol, sufficient  
to make 2 pints.

“Mix the powders with one and one-half pints of Alcohol and macerate the mixture for seven days in a closed vessel; then filter through paper, adding through the filter enough Alcohol to make the Tincture measure two pints.”

MADE BY WATER-BATH PERCOLATION.

(1880 U. S. P. Standard.)

Purified Aloes, in moderately fine  
powder,  $2\frac{7}{8}$  ounces av.  
Myrrh, in moderately fine powder,  $2\frac{7}{8}$  ounces av.  
Alcohol, sufficient to make, 2 pints.

Mix the drugs and agitate them with 28 fluidounces of Alcohol. Cut a piece of burlap or coarse cloth and place in the bottom, on the perforated diaphragm of the water-bath percolator. Pour the mixture into the percolator and set in a warm place for two days; then heat moderately, and after one hour begin to percolate, adding Alcohol through the percolator to make two pints of the Tincture.

## TINCTURA ARNICÆ FLORUM.

*Tincture of Arnica Flowers.*

1870.

Arnica (Flowers),  
                   6½ ounces av.  
 Alcohol,       24 fl.ounces.  
 Water,         8 fl.ounces.  
 Diluted Alcohol, sufficient to  
   make         2 pints.

“Mix the Alcohol and Water and having moistened the Arnica slightly with a portion of the mixture, bruise it thoroughly in a mortar; then pack it firmly in a cylindrical percolator and pour upon it the remainder of the mixture and afterward Diluted Alcohol until two pints of tincture are obtained.”

1880.

Arnica Flowers,  
                   6¼ ounces av.  
 Diluted Alcohol, sufficient to  
   make         2 pints.  
 “Moisten the Arnica Flowers with 12 fluidounces of Diluted Alcohol and macerate for twenty-four hours; then pack it firmly in a cylindrical percolator and gradually pour Diluted Alcohol upon it until two pints of Tincture are obtained.”

## MADE BY WATER-BATH PERCOLATION.

Arnica Flowers, in coarse powder,	6 ounces av.
Alcohol,	22 fl.ounces.
Water, sufficient to make	2 pints.

Moisten the Arnica with 8 ounces of Alcohol and pack very firmly in the water-bath percolator. Pour upon it the remaining 14 ounces of Alcohol and set in a warm place for one day, then heat moderately and after one hour begin to percolate, adding Water to the drug in the percolator after the Alcohol has disappeared and continuing the heat and percolation with water until two pints of the Tincture are obtained. Let it stand for a few days and filter.

The Arnica Flowers can best be reduced to a coarse powder by rubbing them through a coarse sieve. It will be noticed that the proportion of Alcohol is greater than the 1880 Pharmacopœia directs; but it has been found necessary to use a larger quantity in order to retain the properties in solution, as by water-bath percolation a much stronger tincture is made than by the ordinary method.

## TINCTURA ARNICÆ RADICIS.

*Tincture of Arnica Root.*

1880.

Arnica Root in No. 40 powder,       $3\frac{1}{8}$  ounces av.  
 Diluted Alcohol, sufficient to make 2      pints.

“Moisten the powder with 3 ounces of Diluted Alcohol and macerate for 24 hours; then pack it firmly in a cylindrical percolator and gradually pour Diluted Alcohol upon it until two pints of the Tincture are obtained.”

This Tincture is newly officinal and when desired by physicians should be so stated in the prescription. If “Tincture Arnica” only is written the Tincture of Arnica Flowers should be dispensed.

## MADE BY WATER-BATH PERCOLATION.

Arnica Root in No. 40 powder,      3 ounces av.  
 Diluted Alcohol, sufficient to make      2 pints.

Moisten the drug with 3 ounces of Diluted Alcohol and pack firmly in the water-bath percolator. Pour upon it 24 ounces of Diluted Alcohol and set in a warm place for 24 hours; then heat moderately and after one hour begin to percolate, adding Diluted Alcohol to the drug and continuing the heat and percolation until two pints of the Tincture are obtained.

## TINCTURA ASAFÆTIDÆ.

*Tincture of Asafetida.*

1870.

1880.

Asafetida, bruised,	$4\frac{3}{8}$ ounces av.		$5\frac{1}{2}$ ounces av.
Alcohol, sufficient to make	2      pints.		2      pints.

“Mix the Asafetida with a pint and a half of Alcohol and macerate for seven days in a closed vessel; then filter through paper, adding enough Alcohol through the filter to make the Tincture measure two pints.” 1880.

This Tincture may be made by water-bath percolation in the same manner as Tincture of Aloes, but, as it is so difficult to clean a vessel in which it is made, it may not be advisable to use a water-bath percolator for this purpose. It is most convenient to keep a wide-mouth jar expressly for making Tincture of Asafetida, allowing it to macerate for an indefinite time and filtering off a pint, more or less, as is required to fill the shelf bottle.

## TINCTURA AURANTII AMARI.

*Tincture of Bitter Orange Peel.*

1870.

Bitter Orange

Peel,  $4\frac{3}{8}$  ozs. av.  
 Diluted Alcohol, sufficient to  
 make 2 pints.

“Moisten the powder with two fluidounces of Diluted Alcohol, pack it in a conical percolator and gradually pour Diluted Alcohol upon it until two pints of the tincture are obtained.”

1880.

Bitter Orange

Peel,  $6\frac{1}{4}$  ozs. av.  
 Diluted Alcohol, sufficient to  
 make 2 pints.

“Moisten the powder with 6 ounces of Diluted Alcohol and macerate for twenty-four hours; then pack it moderately in a conical percolator and gradually pour Diluted Alcohol upon it until two pints of the Tincture are obtained.”

MADE BY WATER-BATH PERCOLATION.

(1880 U. S. P. Standard.)

Bitter Orange Peel, in No. 30 powder, 6 ounces av.  
 Diluted Alcohol, sufficient to make 2 pints.

Moisten the drug with 6 ounces of Diluted Alcohol and macerate in a closed vessel for 24 hours, then pack moderately in the water-bath percolator, pour upon it a pint and a half of Diluted Alcohol and set in a warm place for 24 hours. Then heat very moderately and after one hour begin to percolate, adding Diluted Alcohol to the drug and continuing the heat and percolation until two pints of the Tincture have passed. Set this aside for a few days to allow the albuminous matter to separate, and then filter.

## TINCTURA AURANTII DULCIS.

*Tincture of Sweet Orange Peel.*

1880.

Sweet Orange Peel, recently  
 separated from the fresh  
 fruit and deprived of the  
 inner white layer, 20 parts or 6 ounces av.  
 Alcohol, sufficient to make 100 “ or 2 pints.

“Mix the Orange Peel previously cut into small pieces with 80 parts or one and one-half pints of Alcohol, and macerate for 24 hours, then pack it moderately in a conical



percolator, and gradually pour Alcohol upon it until one hundred parts, or two pints of Tincture are obtained."

This is a new officinal tincture used chiefly for flavoring other preparations. The short time which is given for maceration seems insufficient, and certainly is unless the peel is cut very fine and bruised so as to rupture the oil cells as much as possible. It will be much better to add the Alcohol to the peel, chopped very fine, and allow it to remain upon it, instead of percolating as directed. After standing a few weeks it may be filtered off for use.

### ORANGE FRUIT TINCTURE.

*Fenner's Formula.*

Oranges, Medium Size, sweet, No. 12 (or 4 pounds av.)  
 Alcohol, 4 pints.  
 Water, sufficient.

Peel the Oranges as you would an apple, taking off a peeling thick enough to contain all the oil cells; squeeze out the juice of the Oranges with a lemon squeezer; chop or cut the peel fine and put it in a wide-mouth jar, or other convenient vessel; pour upon it the Alcohol and expressed juice of the Oranges; macerate for a week or more; add 2 pints of Water and macerate again for a week, then pour off the liquid, pack the macerated peel in a funnel or percolator, and percolate it, first with the poured-off liquid, then add Water enough through the drugs to make the measure a gallon. If cloudy when filtered add a very little Alcohol.

This is a finely flavored preparation and may be used whenever Tincture of Sweet Orange is directed. It is far superior to any other tincture of orange. It should be made when oranges are cheap in sufficient quantity to last a year.

### TINCTURA BELLADONNÆ.

*Tincture of Belladonna.*

Belladonna Leaves, $4\frac{3}{8}$ oz.av.	Belladonna Leaves, $4\frac{3}{4}$ oz.av.
Diluted Alcohol, sufficient to make 2 pints.	Diluted Alcohol sufficient to make 2 pints.

"Moisten the powder with two fluidounces of Diluted Alcohol, pack it firmly in a conical percolator and gradually pour Diluted Alcohol upon it until two pints of tincture are obtained."

"Moisten the powder with six fluidounces of Diluted Alcohol and macerate for twenty-four hours; then pack it firmly in a cylindrical percolator and gradually pour Diluted Alcohol upon it until two pints of Tincture are obtained."

## MADE BY WATER-BATH PERCOLATION.

(1880 U. S. P. Standard.)

Belladonna Leaves in No. 60 powder,  $4\frac{3}{4}$  ounces av.  
 Diluted Alcohol sufficient to make 2 pints.

Moisten the drug with 6 ounces of Diluted Alcohol and macerate for 24 hours in a covered vessel; then pack firmly in the water-bath percolator and pour upon it a pint and a half of Diluted Alcohol; set in a warm place for 24 hours; then heat moderately and begin to percolate, adding Diluted Alcohol to the drug, and continuing the heat and percolation until two pints of Tincture have passed.

## TINCTURA BENZOINI.

*Tincture of Benzoin.*

1870.		1880.	
Benzoin,	6 tr. ounces.	Benzoin,	6 ounces av.
Alcohol,	2 pints.	Alcohol, sufficient	
“Macerate for seven days and filter.”		to make	2 pints.

“Mix the powder with a pint and a half of Alcohol and macerate for 7 days in a closed vessel; then filter through paper, adding through the filter enough Alcohol to make the Tincture measure two pints.” 1880.

## MADE BY WATER-BATH PERCOLATION.

(1880 U. S. P. Standard.)

Benzoin, in coarse powder, 6 ounces av.  
 Alcohol, sufficient to make 2 pints.

Mix the Benzoin with a pint and a half of Alcohol and agitate them together; cover the perforated diaphragm of the water-bath percolator with burlap, and pour the mixture upon it. Set in a warm place for 4 days, then heat moderately and after one hour begin to percolate, adding the Alcohol to the drug and continuing the heat and percolation until two pints of Tincture have passed.

## TINCTURA BENZOINI COMPOSITA.

*Compound Tincture of Benzoin.*

1870.

Benzoin, 3 tr. oz.  
 Socotrine Aloes, 240 grs.  
 Storax, 2 tr. oz.  
 Balsam of Tolu, 1 tr. oz.  
 Alcohol, 2 pints.

“Macerate for 7 days and  
 filter through paper.”

1880.

Benzoin,  $3\frac{1}{4}$  oz. av.  
 Purified Aloes, 236 grains.  
 Storax,  $2\frac{1}{4}$  oz. av.  
 Balsam of Tolu,  $1\frac{1}{8}$  oz. av.  
 Alcohol, sufficient

to make 2 pints.

“Mix the gums, etc., with a pint and a half of Alcohol and macerate the mixture for seven days in a closed vessel; then filter through paper, adding enough Alcohol through the filter to make the Tincture measure 2 pints.” 1880.

MADE BY WATER-BATH PERCOLATION.

(1880 U. S. P. Standard.)

Benzoin, in coarse powder, 3 ounces av.  
 Purified Aloes,  $\frac{1}{2}$  ounce av.  
 Storax, 2 ounces av.  
 Balsam of Tolu, 1 ounce av.  
 Alcohol, sufficient to make 2 pints.

Mix the gums, etc., with a pint and a half of Alcohol and agitate them together. Cover the perforated diaphragm of the water-bath percolator with burlap or coarse cloth and pour the mixture upon it. Set in a warm place for 4 days; then heat moderately, and after one hour begin to percolate, adding Alcohol to the drugs and continuing the heat and percolation until two pints of the Tincture have passed.

## TINCTURA BRYONLÆ.

*Tincture of Bryonia.*

1880.

Bryonia, recently dried, in No. 40  
 powder,  $2\frac{3}{4}$  ounce av.  
 Alcohol, sufficient to make, 2 pints.

“Moisten the powder with 3 fluidounces of Alcohol and

macerate for twenty-four hours ; then pack it firmly in a cylindrical percolator and gradually pour Alcohol upon it until two pints of Tincture are obtained."

MADE BY WATER-BATH PERCOLATION.

Bryonia (root), in No. 40 powder,  $2\frac{3}{4}$  ounces av.  
Alcohol, sufficient to make 2 pints.

Moisten the drug with two ounces of Alcohol and pack firmly in the water-bath percolator. Pour upon it a pint and a half of Alcohol and set in a warm place for two days ; then heat very moderately, and, after one hour, begin to percolate, adding Alcohol to the drug and continuing the heat and percolation until two pints have passed.

TINCTURA CALENDULÆ.

*Tincture of Calendula.*

1880.

Calendula, in No. 20 powder, 6 ounces av.  
Diluted Alcohol, sufficient to make 2 pints.

Moisten the powder with 12 fluidounces of Diluted Alcohol, and macerate for 24 hours ; then pack it firmly in a cylindrical percolator, and gradually pour Diluted Alcohol upon it until two pints of Tincture are obtained.

MADE BY WATER-BATH PERCOLATION.

Calendula (flowers), in No. 20 powder, 6 ounces av.  
Alcohol, 22 fl.ounces.  
Water, sufficient to make 2 pints.

Moisten the Calendula with eight ounces of Alcohol, and pack it very firmly in the water-bath percolator. Pour upon it the remaining 14 ounces of Alcohol and set in a warm place for one day ; then heat moderately, and, after one hour, begin to percolate, adding Water to the drug in the percolator after the Alcohol has disappeared, and continuing the heat and percolation with Water until two pints of Tincture are obtained. Let it stand for a few days and filter.

The Calendula flowers, when dry, can be reduced to a coarse powder by rubbing through a coarse sieve.

The proportion of Alcohol used in this formula is greater

than the pharmacopœia directs, but is no more than is required to hold the medicinal properties in solution.

### TINCTURA CALUMBÆ.

*Tincture of Calumba — 1880. Tincture of Columbo — 1870.*

1870.	1880.
Columbo, No. 20	Calumba, No. 20
powder, 4 $\frac{3}{8}$ oz. av.	powder, 3 oz. av.
Diluted Alcohol,	Alcohol,
sufficient to	Water, each suf-
make 2 pints.	ficient to make 2 pints.

“Moisten the powder with a fluidounce of Diluted Alcohol, transfer it to a conical percolator, and gradually pour Diluted Alcohol upon it until two pints of tincture are obtained.”

“Mix Alcohol and Water (by weight) in the proportion of 3 parts of Alcohol to two parts of water, and, having moistened the powder with 3 ounces of the mixture, macerate for 24 hours; then pack it in a cylindrical percolator, and gradually pour menstruum upon it until two parts of Tincture are obtained.”

MADE BY WATER-BATH PERCOLATION.

(1880 U. S. P. Standard.)

Calumba, in No. 20 powder,	3 ounces av.
Alcohol,	
Water, each sufficient to make	2 pints.

Mix Alcohol and Water in the proportion of 3 $\frac{1}{2}$  measures of Alcohol to 2 measures of Water, and, having moistened the drug with 3 ounces of the mixture, macerate for 24 hours; then pack moderately in the water-bath percolator, pour upon it a pint and a half of the mixed Alcohol and Water, and set in a warm place for 24 hours; then heat moderately, and, after one hour, begin to percolate, adding the menstruum to the drug, and continuing the heat and percolation until two pints have passed. Lastly, let stand for a few days and filter.

## TINCTURA CANNABIS INDICÆ.

*Tincture of Indian Cannabis — 1880.**Tincture of Hemp — 1870.*

1870.	1880.
Extract of Indian Hemp, 360 grains.	Indian Cannabis, $2\frac{3}{4}$ oz. av.
Alcohol, a pint.	Alcohol, sufficient to make a pint.
“ Dissolve the Extract in the Alcohol, and filter through paper.”	“ Moisten the powder with 3 fluidounces of Alcohol, and macerate for 24 hours; then pack it firmly in a cylindrical percolator, and gradually pour Alcohol upon it until a pint of Tincture is obtained.”

MADE BY WATER-BATH PERCOLATION.

(1880 U. S. P. Standard.)

Indian Cannabis, in No. 40 powder,  $5\frac{1}{2}$  ounces av.  
 Alcohol, sufficient to make 2 pints.

Moisten the powder with 4 ounces of Alcohol, pack firmly in the water-bath percolator, pour upon it a pint and a half of Alcohol, and set in a warm place for two days; then heat moderately, and, after one hour, begin to percolate, adding Alcohol to the drug, and continuing the heat and percolation until two pints of the Tincture have passed.

## TINCTURA CANTHARIDIS.

*Tincture of Cantharides.*

1870.	1880.
Cantharides, 480 grs.	Cantharides, 606 grs.
Diluted Alcohol, sufficient to make 2 pints.	Alcohol, sufficient to make 2 pints.
“ Moisten the powder with half a fluidounce of Diluted Alcohol, pack it in a conical percolator, and gradually pour Diluted Alcohol upon it until two pints of tincture are obtained.”	“ Moisten the powder with an ounce of Alcohol, and pack it firmly in the cylindrical percolator; then gradually pour Alcohol upon it until two pints of Tincture are obtained.”

## MADE BY WATER-BATH PERCOLATION.

(1880 U. S. P. Standard.)

Cantharides, in No. 60 powder,	600 grains.
Alcohol, sufficient to make	2 pints.

Moisten the Cantharides with an ounce of Alcohol and pack firmly in the water-bath percolator. Pour upon it a pint and a half of Alcohol and set in a warm place for two days; then heat moderately, and after one hour begin to percolate, adding Alcohol to the drug and continuing the heat and percolation until two pints of Tincture have passed.

## TINCTURA CAPSICI.

*Tincture of Capsicum.*

1870.	1880.
Capsicum, 480 grains.	Capsicum, 600 grains.
Diluted Alcohol, sufficient to make 2 pints.	Alcohol, Water, each, sufficient to make 2 pints.
“Moisten the powder with half a fluidounce of Diluted Alcohol, pack it in a conical percolator and gradually pour Diluted Alcohol upon it until two pints of tincture are obtained.”	“Mix Alcohol and Water in the proportion of 19 parts of Alcohol to one part of Water, and, having moistened the powder with half a fluidounce of the mixture pack it firmly in a cylindrical percolator; then gradually pour menstruum upon it until two pints of Tincture are obtained.”

The 1880 Tincture is a decided improvement over the 1870.

## MADE BY WATER-BATH PERCOLATION.

(1880 U. S. P. Standard.)

Capsicum, in No. 30 powder,	600 grains.
Alcohol,	
Water, each, sufficient to make	2 pints.

Mix Alcohol and Water in the proportion of 19 parts of Alcohol to one part of Water and moisten the drug with an ounce of the mixture. Pack it firmly in the water-bath percolator, pour upon it a pint and a half of the menstruum, and set in a warm place for two days; then heat very moderately and after one hour begin to percolate, adding the



menstruum to the drug and continuing the heat and percolation until two pints of the Tincture have passed.

### TINCTURA CARDAMOMI.

#### *Tincture of Cardamom.*

1870.	1880.
Cardamom, $4\frac{3}{8}$ ounces av.	Cardamom, $4\frac{5}{8}$ ounces av.
Diluted Alcohol, sufficient to make 2 pints.	Diluted Alcohol, sufficient to make 2 pints.
“ Moisten the powder with two fluidounces of Diluted Alcohol, pack it firmly in a cylindrical percolator, and gradually pour Diluted Alcohol upon it until two pints of tincture are obtained.”	“ Moisten the powder with four fluidounces of Diluted Alcohol and macerate for twenty-four hours; then pack in a cylindrical percolator and gradually pour Diluted Alcohol upon it, until two pints of the Tincture are obtained.”

MADE BY WATER-BATH PERCOLATION.

(1880 U. S. P. Standard.)

Cardamom, in No. 30 powder,  $4\frac{5}{8}$  ounces av.  
Diluted Alcohol, sufficient to make 2 pints.

Moisten the powder with 4 ounces of Diluted Alcohol, pack firmly in the water-bath percolator, pour upon it a pint and a half of Diluted Alcohol and set in a warm place for two days; then heat moderately and after one hour begin to percolate, adding Diluted Alcohol to the drug and continuing the heat and percolation until two pints of the Tincture have passed. Lastly, after standing a few days, filter through paper if necessary.

### TINCTURA CARDAMOMI COMPOSITA.

#### *Compound Tincture of Cardamom.*

1870.	1880.
Cardamom, 360 grains.	Cardamom, 285 grains.
Cinnamon, 300 “	Cinnamon, 280 “
Caraway, 120 “	Caraway, 140 “
Cochineal, 60 “	Cochineal, 70 “
Clarified Honey, 2 tr.ounces.	Glycerin, $1\frac{1}{2}$ fl.ounces.
Diluted Alcohol, sufficient to make 2 pints.	Diluted Alcohol, sufficient to make 2 pints.

Mix the drugs and reduce them to a moderately coarse

powder. Moisten them with an ounce of Diluted Alcohol, pack them firmly in a cylindrical percolator and gradually pour Diluted Alcohol upon them until thirty and one half fluidounces have passed. To this add the Glycerin (or Honey 1870), and mix them thoroughly. Filter if necessary.

MADE BY WATER-BATH PERCOLATION.

(1880 U. S. P. Standard.)

Cardamom,	280	grains.
Cinnamon,	280	grains.
Caraway,	140	grains.
Cochineal,	70	grains.
Glycerin,	1½	fl.ounces.
Diluted Alcohol, sufficient to make	2	pints.

Mix the drugs and reduce them to a moderately coarse powder. Moisten them with an ounce of Diluted Alcohol, pack them firmly in the water-bath percolator, pour upon them a pint and a half of Diluted Alcohol and set in a warm place for two days; then heat moderately and after one hour begin to percolate, adding Diluted Alcohol to the drugs and continuing the heat and percolation until 30½ fluidounces of Tincture have passed. To this add the Glycerin and mix thoroughly.

## TINCTURA CASTOREI.

*Tincture of Castor.*

1870.

This Tincture, although no longer officinal, is frequently prescribed and called for. The 1870 formula is as follows:

Castor, bruised,	2 troyounces.
Alcohol,	2 pints.

Macerate for seven days and filter through paper.

## TINCTURA CATECHU COMPOSITA.

*Compound Tincture of Catechu — 1880. Tincture of Catechu — 1870.*

	1870.	1880.
Catechu, in No. 40 powder,	3 tr.ounces	3¾ ounces av.
Cinnamon, “	2 tr.ounces	2½ “ “
Diluted Alcohol, sufficient to make	2 pints.	2 pints.

“Mix the powders, and, having moistened the mixture with 5 fluidounces of Diluted Alcohol, macerate for twenty-four hours; then pack it firmly in a cylindrical percolator and gradually pour Diluted Alcohol upon it until two pints of Tincture are obtained.” 1880.

MADE BY WATER-BATH PERCOLATION.

(1880 U. S. P. Standard.)

Catechu, in No. 40 powder,	3 $\frac{3}{4}$ ounces av.
Cinnamon, “	2 $\frac{1}{2}$ ounces av.
Diluted Alcohol, sufficient to make	2 pints.

Mix the powders with a pint and a half of Diluted Alcohol, and, having covered the perforated diaphragm of the water-bath percolator with a piece of burlap, pour the mixture upon it and set in a warm place for two days; then heat moderately and after one hour begin to percolate, adding Diluted Alcohol to the drugs, and continuing the heat and percolation until two pints of the Tincture have passed.

## TINCTURA CHIRATÆ.

*Tincture of Chirata.*

1880.

Chirata, in No. 40 powder,	3 ounces av.
Diluted Alcohol, sufficient to make	2 pints.

“Moisten the powder with 3 fluidounces of Diluted Alcohol and macerate for twenty-four hours; then pack it firmly in a cylindrical percolator and gradually pour Diluted Alcohol upon it until two pints of Tincture are obtained.”

MADE BY WATER-BATH PERCOLATION.

Chirata, in No. 40 powder,	3 ounces av.
Diluted Alcohol, sufficient to make	2 pints.

Moisten the powder with 3 ounces of Diluted Alcohol and pack firmly in the water-bath percolator. Pour upon it a pint and a half of Diluted Alcohol and set in a warm place for 2 days; then heat moderately and after one hour begin to percolate, adding Diluted Alcohol to the drug and continuing the heat and percolation until two pints of the Tincture have passed.

TINCTURA CHLOROFORMI COMPOSITA. *Br.**Tincture of Chloroform.*

Chloroform,	1 fluidounce.
Rectified Spirit,	4 fluidounces.
Compound Tincture of Cardamom,	5 fluidounces.

Mix them.

Although this preparation is not officinal in the U. S., it is frequently prescribed and used in this country. It is nearly double the strength of the U. S. officinal Spirit of Chloroform.

## TINCTURA CIMICIFUGÆ.

*Tincture of Cimicifuga (Black Cohosh).*

1880.

Black Cohosh, in No. 60 powder,	5½ ounces av.
Alcohol, sufficient to make	2 pints.

“Moisten the powder with 4 ounces of Alcohol and macerate for twenty-four hours; then pack it firmly in a cylindrical percolator and gradually pour Alcohol upon it until two pints of Tincture are obtained.”

## MADE BY WATER-BATH PERCOLATION.

Black Cohosh, in No. 50 powder,	5½ ounces av.
Alcohol, sufficient to make	2 pints.

Moisten the powder with 3 ounces of Alcohol and pack firmly in the water-bath percolator. Pour upon it a pint and a half of Alcohol and set in a warm place for two days; then heat moderately and after one hour begin to percolate, adding Alcohol to the drug and continuing the heat and percolation until two pints of the Tincture have passed.

## TINCTURA CINCHONÆ.

*Tincture of Cinchona.*

1870.

Yellow Cinchona, in No. 50 powder,	6⅝ ounces av.
Alcohol,	
Water, each sufficient to make	2 pints.

“Mix three measures of Alcohol with one of Water.

Moisten the powder with two fluidounces of the mixture, pack it firmly in a conical glass percolator, and gradually pour the mixture upon it until two pints of the tincture are obtained."

1880.

Yellow Cinchona, in No. 60 powder,	6	ounces av.
Glycerin,	2 $\frac{1}{4}$	fl.ounces.
Alcohol,		
Water, each, sufficient to make	2	pints.

"Mix the Glycerin with 23 fluidounces of Alcohol and 7 fluidounces of Water, and having moistened the powder with six ounces of the mixture macerate for twenty-four hours; then pack it firmly in a cylindrical glass percolator, and gradually pour on the remainder of the mixture. When the liquid has disappeared from the surface gradually pour on more of the mixture of Alcohol and Water, using the same proportions as before, and continue the percolation until two pints of the Tincture are obtained."

MADE BY WATER-BATH PERCOLATION.

(1880 U. S. P. Standard.)

Yellow Cinchona, in No. 50 powder,	6	ounces av.
Glycerin,	2	fl.ounces.
Alcohol,		
Water, each, sufficient to make	2	pints.

Mix the Glycerin with 20 fluidounces of Alcohol and 8 fluidounces of Water. Moisten the powder with 6 ounces of the mixture and macerate in a closed vessel for 24 hours. Transfer it then to the water-bath percolator, pack firmly, pour upon it the remainder of the mixture and set in a warm place for 24 hours; then heat very moderately and after one hour begin to percolate. When the liquid has disappeared from the surface, add through the percolator enough Alcohol and Water mixed in the proportion of two measures of Alcohol to one measure of Water to complete the percolation and make two pints of Tincture. Lastly, after standing a few days, filter through paper.

REMARK: Only a good quality of Cinchona Bark should be used for making this Tincture. Much worthless bark is furnished to the trade and, of course, a good preparation cannot be made from poor material. See remarks under Cinchona.

## TINCTURA CINCHONÆ COMPOSITA.

*Compound Tincture of Cinchona. Huxham's Tincture.*

1870.

Red Cinchona, in No. 50 powder,  $3\frac{1}{2}$  ounces av.  
 Bitter Orange Peel, "  $2\frac{1}{2}$  ounces av.  
 Serpentaria, " 288 grains.  
 Alcohol,  
 Water, each, sufficient to make 2 pints.

"Mix three measure of Alcohol with one of Water. Having mixed the powders, moisten them with four fluid-ounces of the menstruum, pack them firmly in a conical glass percolator, and gradually pour on the menstruum until two pints of Tincture are obtained."

1880.

Red Cinchona, 10 parts or 3 ounces av.  
 Bitter Orange Peel, 8 " or  $2\frac{1}{2}$  ounces av.  
 Serpentaria, 2 " or 260 grains.  
 Glycerin, 10 " or  $2\frac{1}{4}$  fl.ounces.  
 Alcohol,  
 Water, each sufficient  
 to make 100 parts or 2 pints.

"Mix the Glycerin with eighty parts or 28 fluidounces of Alcohol and ten parts or 3 fluidounces of Water. Having mixed the Cinchona, Orange Peel and Serpentaria, reduce them to a fine (No. 60) powder. Moisten the powder with twenty parts or 5 fluidounces of the menstruum and macerate for twenty-four hours; then pack it firmly in a cylindrical glass percolator and gradually pour on the remainder of the menstruum. When the liquid has disappeared from the surface, gradually pour upon it enough of a mixture of Alcohol and Water, using the same proportions as before, and continue the percolation until one hundred parts or two pints of Tincture are obtained."

MADE BY WATER-BATH PERCOLATION.

(1880 U. S. P. Standard.)

Red Cinchona, in No. 50 powder, 3 ounces av.  
 Bitter Orange Peel, in No. 30 powder,  $2\frac{1}{2}$  ounces av.  
 Serpentaria, in No. 50 powder, 260 grains.  
 Glycerin, 2 fluidounces.  
 Alcohol,  
 Water, each sufficient to make 2 pints.

Mix the powders, and, having mixed the Glycerin with 20 fluidounces of Alcohol and 2 fluidounces of Water, moisten them with 5 ounces of the mixture and macerate for 24 hours in a closed vessel. Transfer them to the water-bath percolator, pack firmly, pour upon them the remainder of the mixture and set in a warm place for 24 hours; then heat moderately and after one hour begin to percolate, adding, after the liquid has disappeared from the surface, Alcohol and Water mixed in the same proportion as before, and continuing the percolation until two pints of the Tincture have passed. Lastly, after standing a few days, filter through paper.

The same remarks that are made upon Tincture of Cinchona apply to this also.

### TINCTURA CINNAMOMI.

#### *Tincture of Cinnamon.*

1870.

Cinnamon,  $3\frac{1}{4}$  ounces av.  
Alcohol,  
Water, each,  
sufficient to  
make 2 pints.

“Mix two measures of Alcohol with one of Water. Moisten the powder with a fluidounce of the mixture, pack it moderately in a conical percolator and gradually pour the mixture upon it until two pints of filtered liquid (tincture) are obtained.”

1880.

Cinnamon,  $2\frac{7}{8}$  ounces av.  
Alcohol,  
Water, each,  
sufficient to  
make 2 pints.

“Mix Alcohol and Water in the proportion of three parts by weight (22 fluidounces) of Alcohol to two parts (12 fluidounces) of Water and having moistened the powder with 3 fluidounces of the mixture, pack it in a conical percolator and gradually pour menstruum upon it until two pints of Tincture are obtained.”

MADE BY WATER-BATH PERCOLATION.

(1880 U. S. P. Standard.)

Cinnamon, in No. 40 powder,  $2\frac{7}{8}$  ounces av.  
Alcohol,  
Water, each, sufficient to make 2 pints.

Mix Alcohol and Water in the proportion of 22 fluid-



ounces of Alcohol to 12 fluidounces of Water and moisten the powder with 2 ounces of the mixture. Pack firmly in the water-bath percolator, pour upon it a pint and a half of the mixture, and set in a warm place for twenty-four hours; then heat moderately and after one hour begin to percolate, adding the menstruum to the drug and continuing the heat and percolation until two pints of the Tincture have passed.

## TINCTURA COLCHICI.

### *Tincture of Colchicum.*

	1870.	1880.
Colchicum Seed, in No.		
30 powder,	4 $\frac{3}{8}$ ounces av.	4 $\frac{5}{8}$ ounces av.
Diluted Alcohol, sufficient to make	2 pints.	2 pints.

“Moisten the powder with 4 ounces of Diluted Alcohol and macerate for twenty-four hours; then pack it in a cylindrical percolator and gradually pour Diluted Alcohol upon it until 2 pints of Tincture are obtained.” 1880.

MADE BY WATER-BATH PERCOLATION.

(1880 U. S. P. Standard.)

Colchicum Seed, in No. 30 powder, 4 $\frac{5}{8}$  ounces av.  
Diluted Alcohol, sufficient to make 2 pints.

Moisten the powder with four ounces of Diluted Alcohol and macerate in a closed vessel for 24 hours. Transfer to the water-bath percolator, pack firmly, pour upon it a pint and a half of Diluted Alcohol, and set in a warm place for 24 hours; then heat moderately and after one hour begin to percolate, adding Diluted Alcohol to the drug and continuing the heat and percolation until 2 pints of the Tincture have passed. Lastly, after standing a few days, filter through paper.

## TINCTURA CONII.

### *Tincture of Conium.*

The 1870 Pharmacopœia directed Conium Leaves to be used in this preparation, but in the present revision Conium Leaves have been dismissed, the fruit only being officinal.

1870.

Conium Leaves, recently dried, in  
 fine powder. 4 troyounces.  
 Diluted Alcohol, sufficient to make 2 pints.

“Moisten the powder with two fluidounces of Diluted Alcohol, pack it firmly in a conical percolator and gradually pour Diluted Alcohol upon it until two pints of tincture are obtained.”

1880.

Conium (fruit), in No. 30 powder,  $4\frac{3}{4}$  ounces av.  
 Diluted Hydrochloric Acid 1 fl.drachm.  
 Diluted Alcohol, sufficient to make, 2 pints.

“Moisten the powder with 2 fluidounces of Diluted Alcohol, previously mixed with the Diluted Hydrochloric Acid, and macerate for twenty-four hours; then pack it moderately in a conical percolator and gradually pour Diluted Alcohol upon it until two pints of Tincture are obtained.”

MADE BY WATER-BATH PERCOLATION.

(1880 U. S. P. Standard.)

Conium (fruit), in No. 30 powder,  $4\frac{3}{4}$  ounces av.  
 Diluted Hydrochloric Acid, 1 fl.drachm.  
 Diluted Alcohol, sufficient to make 2 pints.

Moisten the Conium with 4 ounces of Diluted Alcohol and macerate in a closed vessel for 24 hours; transfer to the water-bath percolator, pour upon it a pint and a half of Diluted Alcohol and set in a warm place for twenty-four hours, then heat moderately, and after one hour begin to percolate, adding Diluted Alcohol to the drug, and continuing the heat and percolation until two pints of the Tincture have passed; add to this the Diluted Hydrochloric Acid and, after standing a few days, filter through paper.

## TINCTURA CROCI.

*Tincture of Saffron.*

1880.

Saffron, 10 parts or 3 ounces av.  
 Diluted Alcohol, enough  
 to make 100 parts or 2 pints.

“Moisten the Saffron with 3 ounces of Diluted Alcohol and macerate for twenty-four hours; then pack it firmly in

a cylindrical percolator and gradually pour Diluted Alcohol upon it until 100 parts or two pints of Tincture are obtained."

This is a new officinal, designed to be made from the foreign Saffron (*Crocus Sativus*). Many American druggists do not keep this on account of its high price, but use in its place American Saffron or Safflower (*Carthamus Tinctorius*), which much resembles it.

MADE BY WATER-BATH PERCOLATION.

Saffron,	3 ounces av.
Diluted Alcohol, sufficient to make	2 pints.

Moisten the Saffron with 2 ounces of Diluted Alcohol and pack very firmly in the water-bath percolator; pour upon it a pint and a half of Diluted Alcohol and set in a warm place for 24 hours; then heat moderately and, after one hour, begin to percolate, adding Diluted Alcohol to the drug and continuing the heat and percolation until two pints of the Tincture have passed.

TINCTURA CUBEBAE.

*Tincture of Cubeb.*

	1870.	1880.
Cubeb, in No. 30 powder,	4 $\frac{3}{8}$ oz. av.	3 $\frac{1}{8}$ oz. av.
Diluted Alcohol, sufficient to make	2 pints.	2 pints.

"Moisten the powder with 3 ounces of Diluted Alcohol and macerate for 24 hours; then pack it firmly in a cylindrical percolator and gradually pour Diluted Alcohol upon it until two pints of Tincture are obtained." 1880.

MADE BY WATER-BATH PERCOLATION.

(1880 U. S. P. Standard.)

Cubeb, in No. 30 powder,	3 $\frac{1}{8}$ ounces av.
Diluted Alcohol, sufficient to make	2 pints.

Moisten the powder with 3 ounces of Diluted Alcohol and macerate for twenty-four hours in a closed vessel; transfer it to the water-bath percolator, pack firmly, pour upon it a pint and a half of Diluted Alcohol and set it in a warm place for twenty-four hours; then heat very moderately and, after one hour, begin to percolate, adding Diluted Alcohol to the drug and continuing the heat and

percolation until two pints of Tincture are obtained. Lastly, after standing a few days, filter through paper.

### TINCTURA DIGITALIS.

#### *Tincture of Digitalis (Fox Glove).*

	1870.	1880.
Digitalis, recently dried, and in No. 60 powder,	4 $\frac{3}{8}$ oz. av.	4 $\frac{5}{8}$ oz. av.
Diluted Alcohol, sufficient to make	2 pints.	2 pints.

“Moisten the powder with 5 fluidounces of Diluted Alcohol and macerate for 24 hours; then pack it firmly in a cylindrical percolator and gradually pour Diluted Alcohol upon it until two pints of Tincture are obtained.” 1880.

MADE BY WATER-BATH PERCOLATION.

(1880 U. S. P. Standard.)

Digitalis, recently dried, in No. 50  
powder, 4 $\frac{5}{8}$  ounces av.  
Diluted Alcohol, sufficient to make 2 pints.

Moisten the powder with 4 ounces of Diluted Alcohol and macerate for 24 hours in a closed vessel; transfer to the water-bath percolator, pack firmly, pour upon it a pint and a half of Diluted Alcohol and set in a warm place for one day; then heat very moderately and, after one hour, begin to percolate, adding Diluted Alcohol to the drug and continuing the heat and percolation until two pints of the Tincture have passed. Lastly, after standing for a few days, filter through paper.

### TINCTURÆ HERBARUM RECENTIUM.

#### *Tinctures of Fresh Herbs.*

Under this heading the 1880 revision gives a general formula for making Tinctures from Fresh Herbs.

The Fresh Herb, bruised  
or crushed, 50 parts or 16 ounces av.  
Alcohol (by weight), 100 parts or 37 $\frac{2}{3}$  fl.ounces.

Macerate the Herb with the Alcohol for 14 days; then express the liquid and filter.

MADE BY WATER-BATH PERCOLATION.

Tinctures of fresh herbs, flowers, barks, leaves, roots, etc., may be made by water-bath percolation by the following

## GENERAL FORMULA FOR TINCTURES FROM FRESH HERBS, ETC.

The Fresh Herb, Bark, Flower, Leaf	
or Root,	16 ounces av.
Alcohol, sufficient to make	2 pints.

Bruise, crush, cut, grate or otherwise reduce the substance to the proper condition for exhaustion, and pack it in the water-bath percolator; pour upon it a pint of Alcohol and set in a warm place for two days; then heat moderately and, after one hour, begin to percolate, adding Alcohol to the drug and continuing the heat and percolation until a pint and a half has passed. Remove the drug from the percolator, express, and, if the expressed liquid measures more than half a pint, evaporate it to that measure and add to the percolate; but if it measures less than half a pint, make up to that measure with Alcohol and add to the percolate. Lastly, after standing for a few days, filter through paper.

The so-called "Green Tinctures," "Saturated Tinctures," "Specific Tinctures," etc., may be made in this manner.

## TINCTURA FERRI ACETATIS.

*Tincture of Acetate of Iron (Ferric Acetate).*

1880.

	By weight.	By measure.
Solution of Acetate of Iron,	50 parts.	6 $\frac{7}{8}$ fl.ounces.
Alcohol,	30 parts.	5 $\frac{5}{8}$ fl.ounces.
Acetic Ether,	20 parts.	3 $\frac{1}{2}$ fl.ounces.

"Mix the Alcohol and Acetic Ether and gradually add the Solution of Acetate of Iron, taking care that the mixture remains cool."

"Keep the Tincture in glass stoppered bottles in a cool, dark place."

## RADEMACHER'S TINCTURE OF ACETATE OF IRON.

This is much better known than the new officinal Tincture. The formula is therefore given:

Sulphate of Iron, pure,	23 parts.
Acetate of Lead,	24 parts.
Distilled Water,	48 parts.
Good Vinegar,	96 parts.
Alcohol,	80 parts.

Triturate the Sulphate of Iron and Acetate of Lead together in a Wedgewood mortar until a thick magma

results, then add gradually the Water and Vinegar, and pour the whole into a flask or bottle, which is to be kept at a temperature of  $30^{\circ}$  to  $40^{\circ}$  C. ( $86^{\circ}$  to  $104^{\circ}$  F.) for three days, with occasional agitation; filter and let the filtrate stand for 30 days, occasionally shaking, in a wide-mouth bottle, only half filled, and loosely covered with a plate of glass; then add 80 parts of Alcohol and allow to stand ten days more in the same flask, and, finally, filter.

## TINCTURA FERRI CHLORIDI.

### *Tincture of Chloride of Iron.*

	1870.	1880.
	By measure.	By weight.
Solution of Chloride of Iron,	8 fl.ounces.	35 parts.
Alcohol,	24 fl.ounces.	65 parts.

“Mix the Solution with the Alcohol and let it stand in a closely-covered vessel at least three months; then transfer it to glass-stoppered bottles.” 1880.

In making this Tincture by the formula of the 1880 Pharmacopœia, if the articles used are of the standard strength, the proportion will be about 8 fluidounces of the Solution to 25 fluidounces of Alcohol; but as the Solution of Chloride of Iron as bought is not always of the same specific gravity as the Pharmacopœia directs, it is best to combine the ingredients by weight.

## TINCTURE GALLÆ.

### *Tincture of Nutgall.*

1870.	1880.
Nutmeg, No. 50	Nutmeg, No. 40
powder, $4\frac{3}{8}$ ozs. av.	powder, $6\frac{1}{3}$ ozs. av.
Diluted Alcohol, sufficient to make 2 pints.	Glycerin, $2\frac{1}{4}$ fl.ozs.
	Diluted Alcohol, sufficient to make 2 pints.

“Moisten the powder with a fluidounce of Diluted Alcohol, pack it in a glass percolator and gradually pour Diluted Alcohol upon it until two pints of tincture are obtained.”

“Mix the Glycerin with 30 fluidounces of Diluted Alcohol, and, having moistened the powder with 4 ounces of the mixture, pack it in a conical glass percolator; then gradually pour upon it, first the remainder of the mixture, and, afterward, Diluted Alcohol, until two pints of Tincture are obtained.

## TINCTURA GELSEMI.

*Tincture of Gelsemium (Yellow Jasmine).*

1880.

Gelsemium (root), in No.

60 powder, 15 parts or  $4\frac{1}{8}$  ounces av.

Alcohol, sufficient to make 100 parts or 2 pints.

“Moisten the powder with 10 parts or 3 fl.ounces of Alcohol and macerate for twenty-four hours; then pack it firmly in a cylindrical percolator, and gradually pour Alcohol upon it until 100 parts or two pints of Tincture are obtained.”

This is a new officinal tincture that has long been needed. It has heretofore been furnished mostly by manufacturers, who have claimed to make it from the green root.

## MADE BY WATER-BATH PERCOLATION.

Gelsemium, in No. 60 powder, 4 ounces av.

Alcohol, sufficient to make 2 pints.

Moisten the powder with 3 ounces of Alcohol and pack firmly in the water-bath percolator. Pour upon it a pint and a half of Alcohol and set in a warm place for two days; then heat very moderately and after one hour begin to percolate, adding Alcohol to the drug and continuing the heat and percolation until two pints of Tincture have passed.

## TINCTURA GENTIANÆ COMPOSITA.

*Compound Tincture of Gentian.*

1870.

1880.

Gentian,  $2\frac{1}{4}$  ounces av. $2\frac{1}{2}$  ounces av.Bitter Orange Peel,  $1\frac{1}{8}$  ounce av. $1\frac{1}{4}$  ounces av.

Cardamom, 240 grains.

280 grains.

Diluted Alcohol, sufficient to make

2 pints.

2 pints.

“Mix the Gentian, Orange Peel, and Cardamom, and reduce them to a moderately coarse powder. Moisten the powder with 3 ounces of Diluted Alcohol and macerate for twenty-four hours; then pack it in a cylindrical percolator and gradually pour Diluted Alcohol upon it until two pints of Tincture are obtained.” 1880.



MADE BY WATER-BATH PERCOLATION.

(1880 U. S. P. Standard.)

Gentian,	2 $\frac{1}{2}$ ounces av.
Bitter Orange Peel,	1 $\frac{1}{4}$ ounces av.
Cardamom,	280 grains.
Diluted Alcohol, sufficient to make	2 pints.

Mix the drugs and reduce them to a coarse powder. Moisten the powder with 3 ounces of Diluted Alcohol and macerate for twenty-four hours in a closed vessel. Transfer to the water-bath percolator, pack moderately, pour upon it a pint and a half of Diluted Alcohol and set in a warm place for one day; then heat very moderately, and after one hour begin to percolate, adding Diluted Alcohol to the drugs and continuing the heat and percolation until two pints of Tincture are obtained. Lastly, allow to stand for a few days for the albuminous matter to separate, and filter through paper

### COMPOUND TINCTURE OF GENTIAN, IMPROVED.

Gentian, in coarse powder.	2 $\frac{1}{2}$ ounces av.
Cardamom, a fine powder,	$\frac{1}{2}$ ounce av.
Oranges, medium size, sweet,	No. 3.
Alcohol,	1 pint.
Water, sufficient to make	2 pints.

Peel the Oranges, squeeze out the juice, and mix it with 12 fluidounces each of Alcohol and Water. Chop the Orange Peel fine, mix it with the Gentian and Cardamom, and, having moistened the drugs with 3 ounces of the mixture macerate for 24 hours in a closed vessel. Transfer it then to a percolator, pack moderately, pour upon it the remainder of the mixture and set in a warm place for two days; then begin to percolate, adding to the drugs, after the liquid has disappeared from the surface, the remaining 4 ounces of Alcohol mixed with 4 ounces of Water, and continuing the percolation with Water, if necessary, until two pints of Tincture are obtained. Lastly, after standing a few days for the albuminous matter to separate, filter.

This makes an excellent Compound Tincture of Gentian, of much better flavor than the officinal preparation.

## TINCTURA GUAIACI.

*Tincture of Guaiac.*

	1870.	1880.
Guaiac (resin) in coarse powder,	6½ ounces av.	5½ ounces av.
Alcohol, sufficient to make	2 pints.	2 pints.

The 1870 Pharmacopœia directs the Guaiac to be mixed with an equal bulk of dry sand, and percolated in the usual manner until two pints of tincture are obtained.

The 1880 Pharmacopœia directs as follows :

“ Mix the powder with a pint and a half of Alcohol and macerate for seven days in a closed vessel ; then filter through paper, adding through the filter enough Alcohol to make two pints of Tincture.”

MADE BY WATER-BATH PERCOLATION.

(1880 U. S. P. Standard.)

Guaiac, in coarse powder,	5½ ounces av.
Alcohol, sufficient to make	2 pints.

Mix the Guaiac with an equal bulk of coarse sand and agitate the mixture with a pint and a half of Alcohol in a wide-mouth bottle. Cover the perforated diaphragm of the water-bath percolator with burlap or coarse cloth and pour the mixture upon it. Keep in a warm place for 3 days, then heat moderately and after one hour begin to percolate, adding Alcohol to the drug when the liquid has disappeared from the surface, and continuing the heat and percolation until two pints of the Tincture are obtained.

## TINCTURA GUAIACI AMMONIATA.

*Ammoniated Tincture of Guaiac.*

	1870.	1880.
Guaiac (resin), in coarse powder,	6½ ounces av.	5½ ounces av.
Aromatic Spirit of Ammonia,	2 pints.	sufficient.

The 1870 Pharmacopœia directs the Guaiac to be macerated with the Aromatic Spirit of Ammonia for seven days and filtered.

The 1880 Pharmacopœia directs as follows :

“ Mix the powder with a pint and a half of Aromatic Spirit of Ammonia, and macerate for seven days in a closed vessel ; then filter through paper, adding through the filter Aromatic Spirit of Ammonia until two pints of tincture are obtained.”

The filter should be well covered during filtration to prevent evaporation of Ammonia.

## TINCTURA HUMULI.

### *Tincture of Hops.*

1870.	1880.
Hops, No. 20 powder, 5½ ounces av.	Hops, No. 20 powder, 6¼ ounces av.
Diluted Alcohol, sufficient to make 2 pints.	Diluted Alcohol, sufficient to make 2 pints.

“ Moisten the powder with 12 fluidounces of Diluted Alcohol and macerate for 24 hours ; then pack firmly in a cylindrical percolator and gradually pour Diluted Alcohol upon it until two pints of Tincture are obtained.” 1880.

### MADE BY WATER-BATH PERCOLATION.

(1880 U. S. P. Standard.)

Hops, in No. 20 powder, 6¼ ounces av.  
Diluted Alcohol, sufficient to make 2 pints.

Moisten the Hops with 6 ounces of Diluted Alcohol and pack firmly in the water-bath percolator. Pour upon them a pint and a half of Diluted Alcohol and set in a warm place for one day ; then heat moderately and after one hour begin to percolate, adding Diluted Alcohol to the drug and continuing the heat and percolation until two pints of Tincture are obtained.

## TINCTURA HYDRASTIS.

### *Tincture of Hydrastis (Golden Seal).*

1880.

Hydrastis, in No. 60  
powder, 20 parts or 6¼ ounces av.  
Diluted Alcohol, sufficient to make 100 parts or 2 pints.

“Moisten the powder with 5 fluidounces of Diluted Alcohol, and macerate for twenty-four hours; then pack it in a cylindrical percolator and gradually pour Diluted Alcohol upon it until two pints of Tincture are obtained.”

MADE BY WATER-BATH PERCOLATION.

Hydrastis, in No. 50 powder,  $6\frac{1}{4}$  ounces av.  
Diluted Alcohol, sufficient to make 2 pints.

Moisten the powder with 5 ounces of Diluted Alcohol and macerate for twenty-four hours. Transfer to the water-bath percolator, pack firmly, pour upon it a pint and a half of Diluted Alcohol and set in a warm place for one day; then heat moderately and after one hour begin to percolate, adding Diluted Alcohol to the drug and continuing the heat and percolation until two pints of Tincture have passed. Lastly, set aside for a few days, and then filter through paper.

### TINCTURA HYOSCYAMI.

*Tincture of Hyoscyamus (Henbane).*

	1870.	1880.
Hyoscyamus Leaves, recently dried, in No. 60 powder,	$4\frac{3}{8}$ ounces av.	$4\frac{3}{4}$ ounces av.
Diluted Alcohol, sufficient to make	2 pints.	2 pints.

“Moisten the powder with 4 fluidounces of Diluted Alcohol and macerate for twenty-four hours; then pack it firmly in a cylindrical percolator and gradually pour Diluted Alcohol upon it until two pints of Tincture are obtained.”  
1880.

MADE BY WATER-BATH PERCOLATION.

(1880 U. S. P. Standard.)

Hyoscyamus Leaves, in No. 50 powder,  $4\frac{3}{4}$  ounces av.  
Diluted Alcohol, sufficient to make 2 pints.

Moisten the powder with four ounces of Diluted Alcohol and macerate for twenty-four hours in a closed vessel. Transfer to the water-bath percolator, pack firmly, pour upon it a pint and a half of Diluted Alcohol and set in a warm place for one day; then heat moderately, and after

one hour begin to percolate, adding Diluted Alcohol to the drug and continuing the heat and percolation until two pints of Tincture are obtained. Lastly, allow to stand for a few days and filter through paper.

## TINCTURA IGNATIÆ.

### *Tincture of Ignatia.*

1880.

Ignatia, in No. 60 powder,	10 parts.
Alcohol,	
Water, each sufficient.	

This new officinal formula directs the powder to be exhausted with Alcohol and Water, mixed in the proportion of 8 parts of the former to one of the latter. A portion of the Tincture thus obtained is then assayed to ascertain the quantity of dry Extract of Ignatia which it contains, and from this the quantity of extract which the whole percolate represents is to be estimated. Menstruum is then to be added, if required, so that 1 part of the dried extract may be contained in 100 parts of the Tincture. For the detailed formula, see the U. S. P. 1880.

A more simple method of making it is as follows :

Extract Ignatia, Alcoholic, dry,	60 grains.
Alcohol,	14 fl.ounces.
Water,	1 ½ fl.ounces.

Mix the Alcohol and Water and dissolve the Extract in the mixture.

This is the same strength as the officinal formula.

## TINCTURA IODI.

### *Tincture of Iodine—Tinctura Iodinii. 1880.*

	1870.	1880.
Iodine,	480 grains.	8 parts.
Alcohol,	a pint.	92 parts.

“Dissolve the Iodine in the Alcohol.”

As made by either formula the resultant preparation is about the same. The change in spelling the Latin word should be observed.

## TINCTURA IODINII COMPOSITA.

*Compound Tincture of Iodine.*

1870.

Iodine,	240 grains.
Iodide of Potassium,	480 grains.
Alcohol,	a pint.

“Dissolve the Iodine and Iodide of Potassium in the Alcohol.”

This tincture is omitted in the present Pharmacopœia. Its only advantage was that it could be combined with Water, without precipitation.

## TINCTURA IPECACUANHÆ ET OPII.

*Tincture of Ipecac and Opium.*

Deodorized Tincture of Opium,	15 fl.ounces.
Fluid Extract of Ipecac,	1 ½ fl.ounces.
Diluted Alcohol,	sufficient.

“Evaporate the Deodorized Tincture of Opium to 12¾ fluidounces. When it has become cold, add to it the Fluid Extract of Ipecac, filter the mixture and pass through the filter enough Diluted Alcohol to make 15 fluidounces.”

This tincture represents Dover’s powder in a liquid form, 10 minims containing the strength of 1 grain each of Opium and Ipecac.

## TINCTURA JALAPÆ.

*Tincture of Jalap.*

1870.

This tincture is omitted from the 1880 Pharmacopœia and is now seldom prescribed. As it may be called for, however, in some old recipe, the 1870 formula is repeated.

Jalap, in fine powder,	6 troyounces.
Alcohol,	
Water, each, sufficient to make	2 pints.

“Mix two measures of Alcohol with one of Water; then moisten the powder with 2 fluidounces of the mixture, pack it moderately in a cylindrical percolator and gradually pour the mixture upon it until two pints of tincture are obtained.”

## TINCTURA KINO.

*Tincture of Kino.*

1870.

Kino, in fine powder,	360 grains.
Alcohol,	
Water, each sufficient to make	half a pint.

“Mix two measures of Alcohol with one of Water; then mix the powder thoroughly with an equal bulk of dry Sand, and, having introduced the mixture into a conical glass percolator, gradually pour the menstruum upon it until half a pint of tincture is obtained.”

1880.

Kino,	10 parts	or	360 grains.
Glycerin,	15 parts	or	1 fl.ounce.
Alcohol,			
Water, each sufficient			
to make	100 parts	or	$\frac{1}{2}$ pint.

“Mix the Glycerin with 60 parts or 6 fluidounces of Alcohol and 15 parts or  $1\frac{1}{4}$  fluidounces of Water. Rub the Kino in a mortar, adding, gradually, 30 parts or 3 fluidounces of menstruum, until a smooth paste is made; transfer this to a bottle, add the remainder of the menstruum, and macerate for twenty-four hours, occasionally shaking the bottle; then filter through paper, adding through the filter enough of a mixture of Alcohol and Water, made in the proportion of 5 measures of Alcohol to 1 measure of Water, to make half a pint of the Tincture.”

“Keep the tincture in well-stopped bottles.”

The great trouble with Tincture of Kino is its tendency to gelatinize. The 1880 formula, if properly followed, is supposed to overcome this difficulty.

## TINCTURA KRAMERIÆ.

*Tincture of Krameria (Rhatany).*

1870.

1880.

Rhatany (Root) in No. 40 powder,	6 $\frac{1}{2}$ oz. av.	6 $\frac{1}{4}$ oz. av.
Diluted Alcohol, sufficient to make	2 pints.	2 pints.



“Moisten the powder with 6 ounces of Diluted Alcohol and macerate for twenty-four hours ; then pack it in a cylindrical percolator, and gradually pour Diluted Alcohol upon it until two pints of Tincture are obtained.” 1880.

MADE BY WATER-BATH PERCOLATION.

(1880 U. S. P. Standard.)

Rhatany, in No. 40 powder,  $6\frac{1}{4}$  ounces av.  
Diluted Alcohol, sufficient to make 2 pints.

Moisten the powder with 6 ounces of Diluted Alcohol and macerate for one day ; transfer to the water-bath percolator, pack firmly, pour a pint and a half of Diluted Alcohol upon it and set in a warm place for one day ; then heat moderately, and after one hour begin to percolate, adding Diluted Alcohol to the drug, and continuing the heat and percolation until two pints of Tincture have passed. Lastly, after standing a few days, filter through paper.

## TINCTURA LAVANDULÆ COMPOSITA.

*Spiritus Lavandulæ Composita*—1870.

Compound Tincture of Lavender—1880. Compound Spirit of Lavender—1870.

This preparation has been very properly transferred to the Tinctures in the present Pharmacopœia. As the difference is so slight between the 1870 and 1880 preparation the latter formula, only, is given.

Oil of Lavender,	8 parts or	2	fl.drachms.
Oil of Rosmary,	2 parts or	30	minims.
Cinnamon, in coarse powder,	18 parts or	230	grains.
Cloves,	4 parts or	52	grains.
Nutmeg,	10 parts or	128	grains.
Red Saunders, coarse powder,	8 parts or	103	grains.
Alcohol(by weight),	680 parts or	23	fl.ounces.
Water,	270 parts or	$7\frac{5}{8}$	fl.ounces.

Diluted Alcohol,  
sufficient to make 1000 parts or 2 pints.

“Dissolve the Oils in the Alcohol and add the Water ; crush the Nutmeg in a mortar, mix with it the Cinnamon.

Cloves and Red Saunders, and reduce the mixture by grinding to a coarse powder; moisten the mixture with a sufficient quantity of the Alcoholic solution of the Oils, pack it firmly in a cylindrical percolator, gradually pour upon it the remainder of the Alcoholic solution and, afterward, Diluted Alcohol until 1,000 parts or two pints of Tincture are obtained."

## TINCTURA LOBELIÆ.

*Tincture of Lobelia.*

	1870.	1880.
Lobelia (herb), in No. 40 powder,	4 $\frac{3}{8}$ oz. av.	6 $\frac{1}{4}$ oz. av.
Diluted Alcohol, sufficient to make	2 pints.	2 pints.

"Moisten the powder with 6 ounces of Diluted Alcohol and macerate for twenty-four hours; then pack it firmly in a cylindrical percolator and gradually pour Diluted Alcohol upon it until two pints of Tincture are obtained." 1880.

## MADE BY WATER-BATH PERCOLATION.

(1880 U. S. P. Standard.)

Lobelia (herb), in No. 40 powder, 6 $\frac{1}{4}$  ounces av.  
Diluted Alcohol, sufficient to make 2 pints.

Moisten the powder with 6 ounces of Diluted Alcohol and macerate for 24 hours in a closed vessel; transfer it to the water-bath percolator, pack firmly, pour upon it a pint and a half of Diluted Alcohol and set in a warm place for one day; then heat moderately and, after one hour, begin to percolate, adding Diluted Alcohol to the drug, and continuing the heat and percolation until two pints of Tincture are obtained. Lastly, after standing for a few days, filter through paper.

## TINCTURA LUPULINÆ.

*Tincture of Lupulin.*

	1870.
Lupulin,	4 $\frac{3}{8}$ ounces av.
Alcohol, sufficient to make	2 pints.

"Pack the Lupulin in a narrow cylindrical percolator and gradually pour Alcohol upon it until two pints of tincture are obtained."

Although this tincture was omitted from the 1880 Pharmacopœia it will be frequently called for. It may be made by water-bath percolation in the same manner as other tinctures.

## TINCTURA MATICO.

### *Tincture of Matico.*

1880.

Matico, in No. 40 powder,	10 parts or 3 oz. av.
Diluted Alcohol, sufficient to	
make	100 parts or 2 pints.

“Moisten the Matico with 3 ounces of Diluted Alcohol, and macerate for twenty-four hours; then pack it firmly in a cylindrical percolator and gradually pour Diluted Alcohol upon it until two pints of Tincture are obtained.”

MADE BY WATER-BATH PERCOLATION.

Matico, in No. 40 powder,	3 ounces av.
Diluted Alcohol, sufficient to make	2 pints.

Moisten the Matico with 3 ounces of Diluted Alcohol, pack it moderately in the water-bath percolator, pour upon it a pint and a half of Diluted Alcohol, and set in a warm place for one day; then heat moderately, and, after one hour, begin to percolate, adding Diluted Alcohol to the drug, and continuing the heat and percolation until two pints of the Tincture have passed. Lastly, after standing for a few days, filter through paper.

## TINCTURA MOSCHI.

### *Tincture of Musk.*

1880.

Musk,	10 parts or 337	grains.
Alcohol,	45 parts or $4\frac{3}{8}$	fl. ounces.
Water,	45 parts or $3\frac{3}{4}$	fl. ounces.
Diluted Alcohol, sufficient to make	8	fl. ounces.

“Rub the Musk in a mortar, first with a little of the Water until a smooth mixture is made, and then with the remainder of the Water. Transfer the whole to a bottle, add the Alcohol, and macerate the mixture for seven days, occasionally shaking the bottle; then filter through paper, adding

through the filter enough Diluted Alcohol to make the Tincture measure half a pint."

As good grain Musk (which is to be used in this preparation) is worth from \$25.00 to \$35.00 per ounce, it will be advisable to touch this new official very lightly.

## TINCTURA MYRRHÆ.

### *Tincture of Myrrh.*

1870.	1880.
Myrrh, in No. 30 powder, 3¼ oz. av. Alcohol, sufficient to make 2 pints.	Myrrh, in No. 30 powder, 5½ oz. av. Alcohol, sufficient to make 2 pints.
"Introduce the powder into a conical percolator, press it moderately, and gradually pour Alcohol upon it until two pints of tincture are obtained."	"Mix the powder with a pint and a half of Alcohol, and macerate for seven days in a closed vessel; then filter through paper, adding, through the filter, enough Alcohol to make two pints of Tincture."

It will be noticed that the 1880 preparation is much stronger than the former.

### MADE BY WATER-BATH PERCOLATION.

(1880 U. S. P. Standard.)

Myrrh, in No. 30 powder,	5½ oz. av.
Alcohol, sufficient to make	2 pints.

Mix the powder with a pint and a half of Alcohol, and, having covered the perforated diaphragm of the water-bath percolator with burlap or coarse cloth, pour the mixture upon it, and set in a warm place for two days; then heat very moderately, and, after one hour, begin to percolate, adding Alcohol to the drug, and continuing the heat and percolation until two pints of Tincture are obtained.

## TINCTURA NUCIS VOMICÆ.

### *Tincture of Nux Vomica.*

1870.	
Nux Vomica, in fine powder,	8¾ oz. av.
Alcohol, sufficient to make	2 pints.

“Mix the powder with a pint of Alcohol, and digest for twenty-four hours in a close vessel with a gentle heat; then transfer the mixture to a cylindrical percolator, and gradually pour Alcohol upon it until two pints of Tincture are obtained.”

1880.

Nux Vomica, in No. 60 powder, 20 parts or  $5\frac{3}{4}$  oz. av.  
Alcohol,  
Water, each, sufficient.

“Mix Alcohol and Water in the proportion of eight parts by weight (19 fluidounces) of Alcohol to one part (2 fluidounces) of water. Moisten the powder with twenty parts, or 6 fluidounces of the mixture, and macerate for twenty-four hours; then pack it firmly in a cylindrical percolator, and gradually pour menstruum upon it until the Nux Vomica is exhausted. Reserve the first ninety parts of the percolate, évaporate the remainder to ten parts, and mix with the reserved portion. Of this Tincture (which should measure about two pints), take any convenient number of parts, and, by means of a water-bath, evaporate to dryness; weigh the resulting extract, and, from its weight, calculate the quantity of dry extract contained in the one hundred parts of Tincture; then dissolve the dried extract in the remainder of the Tincture, and add enough of the above menstruum to make the product weigh so many parts that each one hundred parts of Tincture shall contain two parts of dry extract. Lastly, mix thoroughly, and filter through paper.”

The Tincture thus prepared should represent about 20 parts of Nux Vomica in 100 parts, and would therefore measure about two pints.

Although the 1880 formula has the advantage of making a preparation of definite strength it will be seldom used by the majority of druggists because of the trouble and nicety of calculation required to obtain the percentage of dry extract.

The 1880 preparation is only about  $\frac{2}{3}$  the strength of the 1870, and the process of macerating with gentle heat, which was formerly employed, was of great advantage.

A simple method of making this Tincture, of the required strength, is as follows:

Extract of Nux Vomica, dry,	60 grains.
Alcohol,	14 fl. ounces.
Water,	$1\frac{1}{2}$ fl ounces.

Mix the Alcohol and Water and dissolve the Extract in the Mixture.

The following formula will be found most expedient for exhausting *Nux Vomica* :

MADE BY WATER-BATH PERCOLATION.

(1880 U. S. P. Standard.)

*Nux Vomica*, in No. 60 powder,     $5\frac{1}{2}$  ounces av.

Alcohol,

Water, each, sufficient to make    2 pints.

Mix Alcohol and Water in the proportion of 19 fluid-ounces of Alcohol to 2 fluidounces of Water, and, having moistened the *Nux Vomica* with 8 ounces of the mixture, macerate it for 24 hours in a closed vessel in a warm place; then pack firmly in the water-bath percolator, pour upon it a pint and a half of menstruum and set in a warm place for two days; then heat moderately and, after one hour, begin to percolate, adding menstruum to the drug, and continuing the heat and percolation until two pints of Tincture are obtained.

## TINCTURA OPII.

*Tincture of Opium (Laudanum).*

	1870.	1880.
Powdered Opium,	$2\frac{3}{4}$ oz. av.	$3\frac{1}{8}$ oz. av.
Water,	16 fl.oz.	$12\frac{3}{4}$ fl.oz.
Alcohol,	16 fl.oz.	$15\frac{3}{8}$ fl.oz.
Diluted Alcohol, sufficient to make	2 pints.	2 pints.
(For 1870 direction see U. S. P. 1870.)		

‘Rub the Opium in a mortar with the Water, previously heated to the temperature of  $90^{\circ}$  C. ( $194^{\circ}$  F.), until a smooth mixture is made, and macerate for 12 hours; then add the Alcohol, mix thoroughly, and transfer the whole to a conical percolator; return to the percolator the first portion of percolate until it becomes clear, and when the liquid ceases to drop gradually pour on Diluted Alcohol, continuing the percolation until two pints of Tincture are obtained.’  
1880.

So much discussion has been carried on in the Pharmaceutical journals regarding the change in the proportion of Opium in this preparation in the new revision that further comments seem uncalled for. It may, however, be remarked that a great share of the druggists consider the change unwise, and continue to make it after the old formula. The

use of Hot Water for macerating the Opium is certainly an advantage as it more completely softens the drug and dissolves out its morphine.

Although powdered Opium is directed to be used in this as well as all other preparations of Opium, it has not heretofore been used by one druggist in a hundred. Two causes have tended to bring about this result ; first, the higher price of powdered Opium, and, second, its liability to sophistication, as it has been formerly furnished ; but now, that powdered Opium, bearing the assay label of reliable houses, may be obtained, this excuse is no longer tenable.

No process for making Tincture of Opium will be found so efficient and economical as the process of water-bath percolation.

#### MADE BY WATER-BATH PERCOLATION.

(1870 U. S. P. Standard.)

Powdered Opium,	2¾ ounces av.
Water,	1 pint.
Alcohol,	1 pint.
Diluted Alcohol, sufficient to make 2 pints.	

Mix the Opium with the Water previously heated to boiling, and macerate for 12 hours ; then, having covered the perforated diaphragm of the water-bath percolator with coarse cloth, pour the mixture upon it ; heat to about 80° C. (176° F.) for two hours, then add the Alcohol and, after half an hour, begin to percolate, adding Diluted Alcohol to the drug when the liquid has all disappeared from the surface, and continuing the heat and percolation until 2 pints of Tincture are obtained. Lastly, after standing a day or two filter through paper.

If moist opium is used instead of powdered, 3¾ ounces av. may be used instead. It should be cut in small pieces and rubbed with Hot Water in a mortar to a uniform pasty mass, then macerated for 10 or 12 hours in a warm place, the Alcohol added, and percolated either by the ordinary process or by water-bath percolation.

If it is desired to make Tincture of Opium of the 1880 strength by water-bath percolation, simply substitute the quantities mentioned in the 1880 formula and proceed as directed.



## TINCTURA OPII ACETATA.

*Acetated Tincture of Opium.*

1870.

Powdered Opium,	2 tr.ounces.
Distilled Vinegar,	12 fl.ounces.
Alcohol,	8 fl.ounces.

“Rub the Opium with the Distilled Vinegar; then add the Alcohol and, having macerated for 7 days, express and filter through paper.”

This tincture is no longer officinal, and would not be here noticed, except that it is sometimes called for, and the formula is convenient for reference. It has no advantages not possessed by Vinegar of Opium, and two preparations so similar are unnecessary.

## TINCTURA OPII CAMPHORATA.

*Camphorated Tincture of Opium (Paregoric).*

1870.

Powd. Opium, 60 grains.  
Benzoic Acid, 60 grains.  
Camphor, 40 grains.  
Oil of Anise, 1 fl.drachm.  
Clarified Honey, 2 tr.ounces.  
Diluted Alcohol, 2 pints.

1880.

Powd. Opium, 56 grains.  
Benzoic Acid, 56 grains.  
Camphor, 56 grains.  
Oil of Anise, 1 fl.drachm.  
Glycerin, 1 fl.ounce.  
Diluted Alcohol,  
sufficient to make, 2 pints.

“Mix the ingredients in a suitable bottle, macerate for seven days and filter through paper.”

“Add 28 fluidounces of Diluted Alcohol to the other ingredients contained in a suitable vessel, and macerate for 7 days, frequently stirring; then filter through paper in a well covered funnel and pass enough Diluted Alcohol through the filter to make two pints.” 1880.

Sixty grains of powdered Extract of Liquorice added to either preparations makes a darker and more desirable color.

The following formula will be found very convenient for making Paregoric quickly or extemporaneously :

RAPID PROCESS FOR MAKING PAREGORIC.

Tincture of Opium (1870),	15/8 fl.ounces.
Benzoic Acid,	60 grains.
Extract of Liquorice, powdered,	60 grains.
Camphor,	40 grains.
Oil of Anise,	1 fl.drachm.
Glycerin,	1 fl.ounce.
Alcohol,	15 fl.ounces.
Water,	15 fl.ounces.

Dissolve the Benzoic Acid, Camphor, and Oil of Anise in the Alcohol, mix the Glycerin, Tincture of Opium and Water, and dissolve the Extract of Liquorice in the mixture ; then mix the two solutions and, after standing a few hours, filter through paper.

TINCTURA OPII DEODORATA.

*Deodorized Tincture of Opium.*

	1870.	1880.
Powdered Opium,	23/4 oz. av.	3 1/4 oz. av.
Ether,	8 fl.oz.	8 1/2 fl.oz.
Alcohol,	8 fl.oz.	8 fl.oz.
Water, sufficient to make	2 pints.	2 pints.

“ Rub the Opium in a mortar with 12 ounces of Water, gradually added, until thoroughly softened, and macerate for 12 hours ; then express, and repeat the operation twice, using the same amount of Water each time ; mix the expressed liquids, evaporate the mixture to 3 1/2 ounces and, when it has cooled, shake it repeatedly with the Ether in a bottle. When the ethereal solution has separated, by standing, pour it off and evaporate the remaining liquids until all traces of Ether have disappeared ; mix the residue with a pint of Water, and filter the mixture through paper. When the liquid has ceased to pass, add enough Water through the filter to make the filtered liquid measure a pint and a half. Lastly, add the Alcohol and mix them.”  
1880.

The directions for making are essentially the same in both revisions. The proportion of Opium is the same as in the ordinary Tincture of Opium.

A method for making Deodorized Tincture of Opium in

which Petrolatum is used instead of Ether for separating the objectionable properties has recently been proposed by E. Rother (A. J. P., February, 1883). If this process is rightly and carefully conducted it will be attended with good results, but it requires more care and attention than druggists usually bestow upon it.

The following formula will be found the most expedient and economical of any that has been proposed. The Opium may be exhausted either by water-bath percolation or, as the Pharmacopœia directs, but the water-bath process is to be preferred :

### DEODORIZED TINCTURE OF OPIUM.

*Fenner's Improved Process.*

(1870 U. S. P. Standard.)

Powdered Opium,	2 $\frac{3}{4}$ ounces av.
Alcohol,	8 fl.ounces.
Gasoline (Petroleum Ether),	8 fl.ounces.
Water, sufficient to make	2 pints.

Mix the Opium with 12 ounces of Hot Water and macerate for 12 hours ; having covered the perforated diaphragm of the water-bath percolator with burlap or coarse cloth, pour the mixture upon it and heat it for four hours to about 85° C. (185° F.) ; then begin to percolate slowly, adding Water to the drug, and continuing the heat and percolation until a pint and a half has passed, or until the drug is exhausted ; evaporate this percolate to 6 fluidounces and, when cool, mix it in a quart bottle with the Gasoline and shake it violently and frequently during 12 hours ; then having inserted a small plug of cotton in the neck, and stopped the lower orifice of a glass funnel with a cork, pour the mixture in it and allow it to stand an hour to separate ; then loosen the cork so that the lower stratum of liquid may be drawn off, and allow the tarry matter and the supernatant Gasoline to remain in the funnel ; evaporate from the drawn-off liquid thus obtained (which is the depurated solution of Opium) all traces of Gasoline, mix it with a pint of water and filter, passing through the filter sufficient Water to make a pint and a half of the filtered liquid ; to this add the Alcohol and, after standing a few days, filter through paper.

As thus prepared the Tincture contains the full strength of the Opium, deprived of its noxious and objectionable

properties. The Gasoline is more efficient than the Ether for the purpose required and is entirely inexpensive.

If it is desired to make this tincture of the 1880 strength, substitute the proportions of the 1880 formula.

## TINCTURA PHYSOSTIGMATIS.

### *Tincture of Calabar Bean.*

1880.

Physostigma, in No. 40  
powder, 10 parts or  $2\frac{3}{4}$  oz. av.  
Alcohol, sufficient to make 100 parts or 2 pints.

“Moisten the powder with 3 ounces of Alcohol, and macerate for 24 hours; then pack it firmly in a cylindrical percolator, and gradually pour Alcohol upon it, until two pints of Tincture are obtained.”

### MADE BY WATER-BATH PERCOLATION.

Calabar Bean, in No. 40 powder,  $2\frac{3}{4}$  ounces av.  
Alcohol, sufficient to make 2 pints.

Moisten the powder with 2 ounces of Alcohol and pack it firmly in the water-bath percolator. Pour upon it a pint and a half of Alcohol and set in a warm place for 3 days; then heat very moderately and after 1 hour begin to percolate adding Alcohol to the drug and continuing the heat and percolation until two pints of Tincture are obtained.

## TINCTURA PYRETHRI.

### *Tincture of Pyrethrum (Pellitory).*

1880.

Pyrethrum, in No. 40  
powder, 20 parts or  $5\frac{1}{2}$  oz. av.  
Alcohol, sufficient to make 100 parts or 2 pints.

“Moisten the powder with 5 ounces of Alcohol, and macerate for 24 hours; then pack it firmly in a cylindrical percolator, and gradually pour Alcohol upon it until two pints of Tincture are obtained.”

## MADE BY WATER-BATH PERCOLATION.

Pellitory, in No. 40 powder,	5½ ounces av.
Alcohol, sufficient to make	2 pints.

Moisten the powder with 4 ounces of Alcohol and pack it firmly in the water-bath percolator. Pour upon it a pint and a half of Alcohol and set in a warm place for two days; then heat very moderately and after one hour begin to percolate, adding Alcohol to the drug and continuing the heat and percolation until two pints of Tincture are obtained.

## TINCTURA QUASSIÆ.

*Tincture of Quassia.*

	1870.	1880.
Quassia, in No. 40 powder,	2¼ oz. av.	3 oz. av.
Diluted Alcohol, sufficient to make	2 pints.	2 pints.

“Moisten the powder with 3 ounces of Diluted Alcohol, and macerate for 24 hours; then pack it firmly in a cylindrical percolator, and gradually pour Diluted Alcohol upon it until two pints of Tincture are obtained.” 1880.

## MADE BY WATER-BATH PERCOLATION.

(1880 U. S. P. Standard.)

Quassia, in No. 40 powder,	3 oz. av.
Diluted Alcohol, sufficient to make	2 pints.

Moisten the drug with 4 ounces of Diluted Alcohol, and macerate for 24 hours; transfer to the water-bath percolator, pack firmly, pour upon it a pint and a half of Diluted Alcohol, and set in a warm place for one day; then heat moderately, and, after one hour, begin to percolate, adding Diluted Alcohol to the drug, and continuing the heat and percolation until two pints of Tincture are obtained.

## TINCTURA RHEI.

*Tincture of Rhubarb.*

	1870.	1880.
Rhubarb,	3¼ oz. av.	3¾ oz. av.
Cardamom(in fine powder) 240	grains.	270 grains.
Diluted Alcohol, sufficient to make	2 pints.	2 pints.

“Mix the Rhubarb and Cardamom, and reduce the mixture to a moderately coarse (No. 40) powder; moisten the powder with 4 ounces of Diluted Alcohol, and macerate for twenty-four hours; then pack it firmly in a cylindrical percolator, and gradually pour Diluted Alcohol upon it until two pints of Tincture are obtained.” 1880.

MADE BY WATER-BATH PERCOLATION.

(1880 U. S. P. Standard.)

Rhubarb, in coarse powder,	3¾ oz. av.
Cardamom, in fine powder,	270 grains.
Diluted Alcohol, sufficient to make	2 pints.

Mix the Rhubarb and Cardamom, moisten them with 4 ounces of Diluted Alcohol, and macerate in closed vessel for 24 hours; transfer to the water-bath percolator, pack moderately, pour upon it a pint and a half of Diluted Alcohol, and set in a warm place for two days; then heat moderately, and, after one hour, begin to percolate, adding Diluted Alcohol to the drug, and continuing the heat and percolation until two pints of Tincture are obtained.

## TINCTURA RHEI AROMATICA.

*Aromatic Tincture of Rhubarb.*

1880.

Rhubarb,	20 parts or	6¾ oz. av.
Cinnamon,	4 parts or	1¼ oz. av.
Cloves,	4 parts or	1¼ oz. av.
Nutmeg,	2 parts or	275 grains.
Diluted Alcohol, sufficient to make	100 parts or	2 pints.

“Mix the Rhubarb, Cinnamon, Cloves and Nutmeg, and reduce the mixture to a moderately coarse powder; moisten the powder with 15 parts or 5 ounces of Diluted Alcohol, and macerate for 24 hours; then pack it firmly in a cylindrical percolator, and gradually pour Diluted Alcohol upon it until 100 parts or two pints of Tincture are obtained.”

MADE BY WATER-BATH PERCOLATION.

Rhubarb,	6¼ ounces av.
Cinnamon,	1¼ ounces av.
Cloves,	1½ ounces av.
Nutmeg,	275 grains.
Diluted Alcohol, sufficient to make	2 pints.

Mix the drugs and reduce them to a moderately coarse powder, moisten the powder with 8 ounces of Diluted Alcohol and macerate 24 hours in a closed vessel; transfer to the water-bath percolator, pack moderately, pour upon it a pint and a half of Diluted Alcohol and set in a warm place for two days; then heat very moderately and, after one hour, begin to percolate, adding Diluted Alcohol to the drugs, and continuing the heat and percolation until two pints of Tincture are obtained. Lastly, after standing a few days, filter through paper.

## TINCTURA RHEI DULCIS.

*Sweet Tincture of Rhubarb.*

1880.

Rhubarb,	8 parts or	2½ ounces av.
Liquorice (Root),	4 parts or	1¼ ounces av.
Anise,	4 parts or	1¼ ounces av.
Cardamom,	1 part or	136 grains.
Diluted Alcohol, sufficient to make	100 parts or	2 pints.

“Mix the Rhubarb, Liquorice, Anise and Cardamom, and reduce them to a moderately coarse (No. 40) powder; moisten the powder with 15 parts or 5 ounces of Diluted Alcohol and macerate for 24 hours; then pack it firmly in a cylindrical percolator and gradually pour Diluted Alcohol upon it until 100 parts or two pints of Tincture are obtained.

## MADE BY WATER-BATH PERCOLATION.

Rhubarb, in No. 30 powder,	2½ ounces av.
Liquorice Root, in No. 30 powder,	1¼ ounces av.
Anise, in No. 40 powder,	1¼ ounces av.
Cardamom, in No. 60 powder,	136 grains.
Diluted Alcohol, sufficient to make	2 pints.

Mix the drugs, moisten them with 5 ounces of Diluted Alcohol and macerate for 24 hours in a closed vessel; transfer to the water-bath percolator, pack moderately, pour upon them a pint and a half of Diluted Alcohol and set in a warm place for one day; then heat moderately and, after one hour, begin to percolate, adding Diluted Alcohol to the drug and continuing the heat and percolation until two pints of Tincture are obtained. Lastly, after standing a few days, filter through paper.



## TINCTURA RHEI ET SENNÆ.

*Tincture of Rhubarb and Senna.*

Although this Tincture has been dismissed from the present revision of the U. S. Pharmacopœia it is still considerably used. It was formerly known as *Warner's Gout Cordial*, and has been an officinal preparation for many generations. Why it should be dismissed and other much less frequently used preparations retained is not apparent. The following is the formula :

Rhubarb, in moderately coarse powder,	480 grains.
Senna,                   "                   "                   "	120 grains.
Coriander,           "                   "                   "	60 grains.
Fennel,               "                   "                   "	60 grains.
Liquorice Extract, in moderately coarse powder,	30 grains.
Raisins, deprived of their seeds,	6½ oz. av.
Diluted Alcohol,	3 pints.

"Macerate for 7 days, express and filter through paper."

## TINCTURA SANGUINARIÆ.

*Tincture of Sanguinaria (Bloodroot).*

1870.

Bloodroot, 4¾ oz. av.  
Alcohol,  
Water, each sufficient.

"Mix three measures of Alcohol with one of Water ; moisten the powder with a fluidounce of the mixture, pack in a conical percolator and gradually pour the menstruum upon it until 2 pints of tincture are obtained.

1880.

Sanguinaria, 4¾ oz. av.  
Alcohol,  
Water, each sufficient.

"Mix Alcohol and Water in the proportion of two parts (by weight) or 24 fluidounces of Alcohol with one part (by weight) or 10 fluidounces of Water ; moisten the powder with 3 ounces of the mixture and macerate for 24 hours ; then pack it firmly in a cylindrical percolator and gradually pour the menstruum upon it until two pints of Tincture are obtained."

MADE BY WATER-BATH PERCOLATION.

(1880 U. S. P. Standard.)

Bloodroot, in No. 60 powder,	4 $\frac{3}{8}$ ounces av.
Alcohol,	24 fl.ounces.
Water,	10 fl.ounces.
Diluted Alcohol, sufficient to make	2 pints.

Mix the Alcohol and Water, moisten the powder with 4 ounces of the mixture and macerate for 24 hours in a closed vessel; transfer it to the water-bath percolator, pack firmly, pour upon it the remainder of the menstruum and set in a warm place for two days; then heat moderately and, after one hour, begin to percolate; when the liquid has all disappeared from the surface of the drug add sufficient Diluted Alcohol, through the percolator, to make the Tincture measure two pints. Lastly, after standing a few days, filter through paper.

## TINCTURA SAPONIS VIRIDIS.

*Tincture of Green Soap.*

1880.

Green Soap,	65 parts or 10 ounces av.
Oil of Lavender,	2 parts or 3 fl.drachms.
Alcohol, sufficient to make	100 parts or 1 pint.

“ Mix the Soap and the Oil of Lavender with 33 parts or 6 fluidounces of Alcohol, and let the mixture macerate until the Soap is dissolved; then filter through paper, adding Alcohol through the filter until 100 parts or one pint of Tincture is obtained.”

This preparation may be quickly made by heating the ingredients together in the water-bath percolator until the Soap is dissolved and then drawing off the liquid.

## TINCTURA SCILLÆ.

*Tincture of Squil.*

	1870.	1880.
Squill, in No. 30 powder,	4 $\frac{3}{8}$ oz. av.	4 $\frac{3}{4}$ ounces av.
Diluted Alcohol, sufficient to make	2 pints	2 pints.

“Moisten the powder with 6 ounces of Diluted Alcohol and macerate for 24 hours; then pack it moderately in a conical percolator and gradually pour Diluted Alcohol upon it until two pints of Tincture are obtained.” 1880.

MADE BY WATER-BATH PERCOLATION.

(1880 U. S. P. Standard.)

Squill, in No. 30 powder,	4 $\frac{3}{4}$ ounces av.
Diluted Alcohol, sufficient to make	2 pints.

Moisten the powder with 6 ounces of Diluted Alcohol and macerate for 24 hours; transfer it to the water-bath percolator, pack moderately, pour upon it a pint and a half of Diluted Alcohol, and set in a warm place for two days; then heat moderately, and after one hour begin to percolate, adding Diluted Alcohol to the drug and continuing the heat and percolation until two pints of tincture have passed.

### TINCTURA SENEGÆ, *Br.*

#### *Tincture of Senega.*

This tincture is officinal in the British Pharmacopœia but not in the U. S.

It may be made as follows:

MADE BY WATER-BATH PERCOLATION.

Senega Root in coarse powder,	3 $\frac{1}{2}$ ounces av.
Diluted Alcohol, sufficient to make	2 pints.

Moisten the powder with 3 ounces of Diluted Alcohol, and macerate for 24 hours in a closed vessel; transfer it to the water-bath percolator, pack it moderately, pour upon it a pint and a half of Diluted Alcohol and set in a warm place for one day; then heat very moderately, and after one hour begin to percolate, adding Diluted Alcohol to the drug and continuing the heat and percolation until two pints of Tincture have passed. Lastly, set aside for a few days and then filter through paper.

### TINCTURA SENNÆ, *Br.*

#### *Tincture of Senna, Compound Tincture of Senna.*

Although this tincture is not officinal in the United

States it is frequently used and prescribed in this country. It was formerly known as *Elixir Salutis*. It may be made by water-bath percolation as follows:

## MADE BY WATER-BATH PERCOLATION.

Senna, in coarse powder,	3½ oz. av.
Raisins, free from seeds, chopped,	3 oz. av.
Caraway Seed, in coarse powder,	¾ oz. av.
Coriander Seed, in coarse powder,	¾ oz. av.
Diluted Alcohol, sufficient to make,	2 pints.

Mix the drugs, moisten them with half a pint of Diluted Alcohol, and macerate for 24 hours in a closed vessel; transfer to the water-bath percolator, pack moderately, pour upon it a pint and a half of Diluted Alcohol, and set in a warm place for two days; then heat very moderately, and, after one hour, begin to percolate, adding Diluted Alcohol to the drugs, and continuing the heat and percolation until two pints of Tincture have passed.

## TINCTURA SERPENTARIÆ.

*Tincture of Serpentaria.*

	1870.	1880.
Serpentaria, in No. 40 powder,	43⅛ oz. av.	3 oz. av.
Diluted Alcohol, sufficient to make	2 pints.	2 pints.

“Moisten the powder with 3 ounces of Diluted Alcohol, and macerate for 24 hours; then pack it firmly in a cylindrical percolator, and gradually pour Diluted Alcohol upon it until two pints of Tincture are obtained.” 1880.

## MADE BY WATER-BATH PERCOLATION.

## (1880 U. S. P. Standard.)

Serpentaria, in No. 40 powder,	3 oz. av.
Diluted Alcohol, sufficient to make	2 pints.

Moisten the powder with 3 ounces of Diluted Alcohol, and macerate for 24 hours; transfer to the water-bath percolator, pack firmly, pour upon it a pint and a half of Diluted Alcohol, and set in a warm place for two days; then heat moderately, and, after one hour, begin to percolate, adding Diluted Alcohol to the drug, and continuing the heat and percolation until two pints of Tincture have passed.

## TINCTURA STRAMONII.

*Tincture of Stramonium.*

	1870.	1880.
Stramonium Seed, in No. 40 powder,	4 $\frac{3}{8}$ oz. av.	3 oz. av.
Diluted Alcohol, sufficient to make	2 pints.	2 pints.

“Moisten the powder with 3 ounces of Diluted Alcohol, and macerate for 24 hours; then pack it firmly in a cylindrical percolator, and gradually pour Diluted Alcohol upon it until two pints of Tincture are obtained.” 1880.

MADE BY WATER-BATH PERCOLATION.

(1880 U. S. P. Standard.)

Stramonium Seed, in No. 40 powder,	3 oz. av.
Diluted Alcohol, sufficient to make	2 pints.

Moisten the powder with 3 ounces of Diluted Alcohol, and macerate for 24 hours; transfer to the water-bath percolator, pack firmly, pour upon it a pint and a half of Diluted Alcohol, and set in a warm place for two days; then heat moderately, and, after one hour, begin to percolate, adding Diluted Alcohol to the drug, and continuing the heat and percolation until two pints of Tincture have passed.

## TINCTURA SUMBUL.

*Tincture of Sumbul.*

1880.

Sumbul, in No. 30 powder,	10 parts or 2 $\frac{3}{4}$ oz. av.
Alcohol, sufficient to make	100 parts or 2 pints.

“Moisten the powder with 10 parts or 3 fluidounces of Alcohol, and macerate for 24 hours; then pack it firmly in a cylindrical percolator, and gradually pour Alcohol upon it until 100 parts or two pints of Tincture are obtained.”

MADE BY WATER-BATH PERCOLATION.

Sumbul, in No. 30 powder,	2 $\frac{3}{4}$ oz. av.
Alcohol, sufficient to make	2 pints.

Moisten the powder with 2 ounces of Alcohol, and pack it firmly in the water-bath percolator. Pour upon it a pint and a half of Alcohol, and set in a warm place for two days; then heat very moderately, and, after one hour, begin to percolate, adding Alcohol to the drug, and continuing the heat and percolation until two pints of Tincture have passed.

## TINCTURA TOLUTANA.

*Tincture of Tolu.*

1870.

Balsam of Tolu,  $3\frac{1}{4}$  oz. av.  
Alcohol, 2 pints.

“Macerate the Balsam with the Alcohol until it is dissolved, then filter through paper.”

1880.

Balsam of Tolu,  $2\frac{3}{4}$  oz. av.  
Alcohol, *q. s.* to  
make 2 pints.

“Add the Balsam of Tolu to 30 fluidounces of Alcohol, and macerate until dissolved; then filter through paper, adding through the filter enough Alcohol to make two pints.”

This Tincture may be quickly made by the aid of heat. The Balsam and the Alcohol may be put together in a bottle and macerated in a water-bath until the Balsam is dissolved.

## TINCTURA VALERIANÆ.

*Tincture of Valerian.*

1870.

Valerian, in moderately fine powder,  $4\frac{3}{8}$  oz. av.  
Diluted Alcohol, sufficient to make 2 pints.

“Moisten the powder with a fluidounce of Diluted Alcohol, pack it in a conical percolator, and gradually pour Diluted Alcohol upon it until two pints of the Tincture are obtained.

1880.

Valerian, in No. 60 powder, 20 parts or 6 oz. av.  
Alcohol,  
Water, each, sufficient to  
make 100 parts or 2 pints.

“Mix Alcohol and water in the proportion of two pints

(by weight), or 24 fluidounces of Alcohol to 1 part or 10 fluidounces of Water. Moisten the powder with 15 parts or 5 ounces of the mixture, and macerate for twenty-four hours; then pack it firmly in a cylindrical percolator, and gradually pour menstruum upon it until 100 parts or two pints of Tincture are obtained."

MADE BY WATER-BATH PERCOLATION.

(1880 U. S. P. Standard.)

Valerian, in No. 50 powder,	6 oz. av.
Alcohol,	
Water, each sufficient to make	2 pints.

Mix Alcohol and Water in the proportion of 24 fluidounces of Alcohol to 10 fluidounces of Water. Moisten the powder with 5 ounces of the mixture, and macerate for 24 hours. Transfer to the water-bath percolator, pack firmly, pour upon it a pint and a half of the menstruum, and set in a warm place for two days; then heat very moderately, and, after one hour, begin to percolate, adding menstruum to the drug, and continuing the heat and percolation until two pints of Tincture are obtained. Lastly, after-standing a few days, filter through paper.

## TINCTURE VALERIANÆ AMMONIATA

*Ammoniated Tincture of Valerian.*

1870.	1880.
Valerian, 4 $\frac{3}{8}$ ounces av.	Valerian, 6 ounces av.
Aromatic Spirit	Aromatic Spirit
of Ammonia, 2 pints.	of Ammonia,
"Macerate for seven days,	sufficient to
express and filter through	make
paper."	2 pints.

"Moisten the powder with 5 ounces of Aromatic Spirit of Ammonia and macerate for 24 hours in a closed vessel; then pack it firmly in a cylindrical glass percolator and gradually pour Aromatic Spirit of Ammonia upon it until two pints of Tincture are obtained." 1880.



## TINCTURA VANILLÆ.

*Tincture of Vanilla.*

1880.

Vanilla, cut small and bruised,	10 parts or 3 ounces av.
Sugar, in coarse powder,	20 parts or 6 ounces av.
Alcohol,	
Water, each sufficient to make	100 parts or 2 pints.

“Mix Alcohol and Water in the proportion of two parts (by weight), or 24 fluidounces of Alcohol to one part or 10 fluidounces of Water; macerate the Vanil'a in 50 parts or one pint of this mixture for 12 hours, then drain off the liquid, and set it aside. Transfer the Vanilla to a mortar, beat it with the Sugar into a uniform powder, then pack it in a percolator and pour upon it the reserved liquid; when this has disappeared from the surface, gradually pour on menstruum, and continue the percolation until 100 parts or two pints of Tincture are obtained.”

## MADE BY WATER-BATH PERCOLATION.

Vanilla, cut small and bruised,	3 ounces av.
Sugar, granulated,	6 ounces av.
Alcohol,	
Water, each sufficient to make	2 pints.

Mix Alcohol and Water in the proportion of 24 fluidounces of Alcohol to 10 fluidounces of Water. Moisten the Vanilla with 3 ounces of the mixture and macerate in a closed vessel for 24 hours; transfer it to a mortar and beat it thoroughly with the sugar until it is reduced to a coarse powder, pack this very firmly in the water-bath percolator, pour upon it a pint and a half of the menstruum and set in a warm place for two days; then heat very moderately and after one hour begin to percolate adding the menstruum to the drug and continuing the heat and percolation until two pints of Tincture are obtained. Lastly, after standing a few days, filter through paper.

This tincture may be used as a flavoring extract but is stronger than is usually sold for that purpose. Formulæ for flavoring extracts of Vanilla will be found in FENNER'S FORMULARY.

## TINCTURA VERATRI VIRIDIS.

*Tincture of Veratrum Viride (American Hellebore).*

	1870.	1880.
Veratrum Viride (American Hellebore),		
in No. 60 powder,	17½ ounces av.	14½ ounces av.
Alcohol, sufficient to make	2 pints.	2 pints.

“Moisten the powder with 5 ounces of Alcohol and macerate for twenty-four hours; then pack it firmly in a cylindrical percolator and gradually pour Alcohol upon it until two pints of Tincture are obtained.” 1880.

MADE BY WATER-BATH PERCOLATION.

(1880 U. S. P. Standard.)

Veratrum Viride, in No. 50 powder,	14½ ounces av.
Alcohol, sufficient to make	2 pints.

Moisten the powder with 8 fluidounces of Alcohol and pack it firmly in the water-bath percolator, pour upon it a pint and a half of Alcohol and set in a warm place for four days; then heat very moderately and after one hour begin to percolate adding Alcohol and continuing the heat and percolation until two pints of Tincture are obtained. The Alcohol remaining in the drug after percolation may be recovered by distillation.

This tincture is made to take the place of Norwood's Tincture of Veratrum Viride, which has become popular on account of its reliability. The original Norwood's Tincture is made from the green root of the American Hellebore and is probably superior to any preparation made from the dried root. This Tincture may be prepared from the green root in the same way as is directed for making *Tincturæ Herbarum Recentium*, which see.

## TINCTURA ZINGIBERIS.

*Tincture of Ginger.*

	1870.	1880.
Ginger, in No. 40 powder,	8¾ ounces av.	5¾ ounces av.
Alcohol, sufficient to make	2 pints.	2 pints.

“Moisten the Ginger with 2 ounces of Alcohol and macerate for twenty-four hours; then pack it firmly in a cylin-

drical percolator and gradually pour Alcohol upon it until two pints of Tincture are obtained." 1880.

## MADE BY WATER-BATH PERCOLATION.

(1880 U. S. P. Standard.)

Ginger, in No. 40 powder,	5 $\frac{3}{4}$ ounces av.
Alcohol, sufficient to make	2 pints.

Moisten the Ginger with 4 ounces of Alcohol and pack firmly in the water-bath percolator, pour upon it a pint and a half of Alcohol and set in a warm place for two days; then heat very moderately and after one hour begin to percolate slowly, adding Alcohol to the drug and continuing the heat and percolation until two pints of Tincture are obtained.

The Alcohol remaining in the drug after percolation may be recovered by distillation.

## TRITURATIONES—TRITURATIONS.

Triturations are a class of preparations newly introduced into the Pharmacopœia, which consist of some active medicinal agent, reduced by rubbing intimately in a mortar with nine times its weight of Sugar of Milk or some other inert diluent. But one formula, besides the general formula for making them is given; any substance however, may be made up in the form of a trituration if desired, and, indeed, this is a very good way to exhibit medicines of which a very small dose only is required, as the medicinal agent is finely divided and the dose can be properly regulated. The following is the

## GENERAL FORMULA FOR TRITURATIONS.

The Substance,	10 parts.
Sugar of Milk, in moderately fine powder,	90 parts.
To make	<u>100</u> parts.

“Weigh the Substance and Sugar of Milk separately; then place the Substance, previously reduced, if necessary, to a moderately fine powder, in a mortar; add about an equal

bulk of Sugar of Milk, mix well by means of a spatula and triturate them thoroughly together. Add fresh portions of the Sugar of Milk, from time to time, until the whole is added and continue the trituration until the substance is intimately mixed with the Sugar of Milk and finely comminuted."

### TRITURATIO ELATERINI.

#### *Trituration of Elaterin.*

Elaterin,	10 parts or grains
Sugar of Milk, in moderately fine powder,	90 parts or grains

To make	100 parts or grains.
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"Mix them thoroughly by trituration."

This serves as a sample formula, the only one that is given as officinal.

### TROCHISCI—TROCHES.

The formulæ for Troches so nearly correspond in the 1870 and 1880 revisions of the Pharmacopœia that a comparison of them is unnecessary. Like the officinal formulæ for pills, they are now seldom prepared by druggists, manufacturers having mostly monopolized the business and driven the officinal Troches out of use, by introducing more elegant or convenient preparations.

Many of the medicinal agents that are introduced in the form of Troches in the Pharmacopœia formulæ seem inappropriate to be exhibited in this form. It would seem natural that only such remedies should be used in Troches as, by their slow solution, would act locally upon the mucous membrane of the parts with which they come in contact—the throat, larynx, etc.

To make Troches, a board about 5 × 10 inches, with a rim projecting above its surface about  $\frac{1}{8}$  of an inch, and a cylindrical rolling pin, should be provided. The ingredients are then to be mixed into a stiff mass or dough, the board dusted with a mixture of powdered sugar and starch, and the mass rolled out between the projecting lateral edges of the board,

filling it entirely from the end out, as far as it will. It is then to be divided with a knife or spatula into the required number of Troches, and dried by gentle heat. Lozenge cutters that make about 12 grains Troches may be obtained of jobbers or dealers in pharmaceutical apparatus, but they cut only a definite size, not adapting themselves to the specific quantity of the medicinal agent directed in the formula.

The following formulæ for Troches represent those now official; others can be made as desired in the same general manner. The solid ingredients to be incorporated are all to be in fine powder.

### TROCHISCI ACIDI TANNICI.

#### *Troches of Tannic Acid.*

Tannic Acid,	100 grains or	6.50 grammes.
Sugar, in fine powder,	1,000 grains or	65.00 grammes.
Tragacanth, in fine powder,	25 grains or	1.60 grammes.
Orange Flower Water, sufficient to make	100	troches.

“Rub the powders together until they are thoroughly mixed; then, with Orange Flower Water, form a mass, to be divided into 100 troches.”

### TROCHISCI AMMONII CHLORIDI.

#### *Troches of Chloride of Ammonium.*

Chloride of Ammonium, in		
fine powder,	200 grains or	13.00 grammes.
Sugar, in fine powder,	1,000 grains or	65.00 grammes.
Tragacanth, in fine powder,	25 grains or	1.60 grammes.
Syrup of Tolu, sufficient to make	100	troches.

“Rub the powders together until they are thoroughly mixed; then, with Syrup of Tolu, form a mass to be divided into 100 troches.”

### TROCHISCI CATECHU.

#### *Troches of Catechu.*

Catechu, in fine powder,	100 grains or	6.50 grammes.
Sugar, in fine powder,	1000 grains or	65.00 grammes.
Tragacanth, in fine powder,	25 grains or	1.60 grammes.
Orange Flower Water, sufficient to make	100	troches.

“Rub the powders together until they are thoroughly mixed ; then, with Orange Flower Water, form a mass, to be divided into 100 troches.”

### TROCHISCI CRETÆ.

#### *Troches of Chalk.*

Prepared Chalk,	400 grains or 26.00 grammes.
Acacia, in fine powder,	100 grains or 6.50 grammes.
Nutmeg, in fine powder,	15 grains or 1.00 gramme.
Sugar, in fine powder,	600 grains or 39.00 grammes.

“Rub them together until they are thoroughly mixed ; then, with water, form a mass, to be divided into 100 troches.”

### TROCHISCI CUBEÆ.

#### *Troches of Cubeb.*

Oleoresin of Cubeb,	50 grains or 3.25 grammes.
Oil of Sassafras,	15 grains or 1.00 gramme.
Extract of Liquorice, in fine powder,	400 grains or 26.00 grammes.
Acacia, in fine powder,	200 grains or 13.00 grammes.
Syrup of Tolu, sufficient to make	100 troches.

“Rub the powders together until they are thoroughly mixed ; then add the Oleoresin and Oil and incorporate them with the mixture. Lastly, with Syrup of Tolu form a mass, to be divided into 100 troches.”

### TROCHISCI FERRI.

#### *Troches of Iron.*

Hydrated Oxide of Iron, dried at a temperature not exceeding 80° C. (176° F.),	500 grains or 32.50 grammes.
Vanilla, cut in slices,	10 grains or 0.65 gramme.
Sugar, in fine powder,	1,500 grains or 97.50 grammes.
Mucilage of Tragacanth, sufficient to make	100 troches.

“Rub the Vanilla first with a portion of the Sugar to a uniform powder, and afterward with the Oxide of Iron and the remainder of the Sugar until they are thoroughly mixed ; then, with Mucilage of Tragacanth, form a mass, to be divided into 100 troches.”

This differs from the 1870 formula for Troches of Subcarbonate of Iron by the substitution of the Hydrated Oxide of Iron in place of the Subcarbonate.

## TROCHISCI GLYCYRRHIZÆ ET OPII.

### *Troches of Liquorice and Opium.*

Extract of Liquorice, in fine powder,	200 grains or 13.00 grammes.
Extract of Opium,	5 grains or 0.32 gramme.
Acacia, in fine powder,	200 grains or 13.00 grammes.
Sugar, in fine powder,	300 grains or 19.50 grammes.
Oil of Anise,	3 grains or 0.20 gramme.

“ Rub the powders together until they are thoroughly mixed ; then add the Oil of Anise and incorporate it with the mixture. Lastly, with water, form a mass, to be divided into 100 troches.

## TROCHISCI IPECACUANHÆ.

### *Troches of Ipecac.*

Ipecac, in fine powder,	25 grains or 1.60 grammes.
Tragacanth, in fine powder,	25 grains or 1.60 grammes.
Sugar, in fine powder,	1,000 grains or 65.00 grammes.
Syrup or Orange, sufficient to make	100 troches.

“ Rub the powders together until they are thoroughly mixed ; then, with Syrup of Orange, form a mass, to be divided into 100 troches.”

The 1880 formula directed about 25 per cent. of Arrow Root ; its place is supplied in the present formula with Sugar.

## TROCHISCI KRAMERIÆ.

### *Troches of Krameria (Rhatany).*

Extract of Krameria,	100 grains or 6.50 grammes.
Sugar, in fine powder,	1,000 grains or 65.00 grammes.
Tragacanth, in fine powder,	25 grains or 1.60 grammes.
Orange Flower Water, sufficient to make	100 troches.

“ Rub the powders together until they are thoroughly mixed ; then, with Orange Flower Water, form a mass, to be divided into 100 troches.”



## TROCHISCI MAGNESIÆ.

*Troches of Magnesia.*

Magnesia,	300 grains or	19.50 grammes.
Nutmeg, in fine powder,	15 grains or	1.00 gramme.
Sugar, in fine powder,	900 grains or	58.50 grammes.
Mucilage of Tragacanth, sufficient to make	100 troches.	

“Rub the Magnesia and the powders together until they are thoroughly mixed ; then, with Mucilage of Tragacanth, form a mass, to be divided into 100 troches.”

## TROCHISCI MENTHÆ PIPERITÆ.

*Troches of Peppermint.*

Oil of Peppermint,	15 grains or	1.00 gramme.
Sugar in fine powder,	1,200 grains or	78.00 grammes.
Mucilage of Tragacanth sufficient to make	100 troches	

“Rub the Oil of Peppermint and the Sugar together until they are thoroughly mixed ; then, with Mucilage of Tragacanth, form a mass, to be divided into 100 troches.”

## TROCHISCI MORPHINÆ ET IPECACUANHÆ.

*Troches of Morphine and Ipecac.*

Sulphate of Morphine,	2½ grains or	0.16 gramme.
Ipecac, in fine powder,	8 grains or	0.15 gramme.
Sugar, in fine powder,	1,000 grains or	65.00 grammes.
Oil of Gaultheria,	1 grain or	0.07 gramme.
Mucilage of Tragacanth, sufficient to make	100 troches.	

“Rub the powders together until they are thoroughly mixed ; then add the Oil of Gaultheria, and incorporate it with the mixture. Lastly, with Mucilage of Tragacanth, form a mass to be divided into 100 troches.

## TROCHISCI POTASSII CHLORATIS.

*Troches of Chlorate of Potassium.*

Chlorate of Potassium		
in fine powder,	500 grains or	32.50 grammes.
Sugar, in fine powder,	1,900 grains or	124.00 grammes.
Tragacanth, in fine powder,	100 grains or	6.50 grammes.
Spirit of Lemon,	10 grains or	0.65 gramme.
To make	100 troches.	

“Mix the Sugar with the Tragacanth and the Spirit of Lemon by trituration in a mortar; then transfer the mixture to a sheet of paper and by means of a bone spatula mix with it the Chlorate of Potassium, being careful to avoid trituration and pressure to prevent the mixture from igniting or exploding. Lastly, with water form a mass, to be divided into 100 troches.”

### TROCHISCI SODII BICARBONATIS.

#### *Troches of Bicarbonate of Sodium.*

Bicarbonate of Sodium,	300 grains or 19.50 grammes.
Sugar, in fine powder,	900 grains or 58.50 grammes.
Nutmeg, in fine powder,	15 grains or 1.00 gramme.
Mucilage of Tragacanth,	sufficient to make 100 troches.

“Rub the Bicarbonate of Sodium with the powders until they are thoroughly mixed; then, with Mucilage of Tragacanth, form a mass, to be divided into 100 troches.”

### TROCHISCI SODII SANTONINATIS.

#### *Troches of Santoninate of Sodium.*

Santoninate of Sodium, in	
fine powder,	100 grains or 6.50 grammes.
Sugar, in fine powder,	2000 grains or 130.00 grammes.
Tragacanth, in fine powder,	50 grains or 3.25 grammes.
Orange Flower Water,	sufficient to make 100 troches.

“Rub the powders together until they are thoroughly mixed; then, with Orange Flower Water, form a mass, to be divided into 100 troches.”

These troches are evidently designed to take the place of the Troches of Santonine that were official in the 1870 revision, but it is much to be questioned if Santoniate of Sodium is so effective or safe as the Alkaloid for a vermifuge.

### TROCHISCI ZINGIBERIS.

#### *Troches of Ginger.*

Tincture of Ginger,	200 grains or 13.00 grammes.
Tragacanth, in fine powder,	50 grains or 3.25 grammes.
Sugar, in fine powder,	2000 grains or 130.00 grammes.
Syrup of Ginger	sufficient to make 100 troches.

“Mix the Tincture of Ginger with the Sugar and, having exposed the mixture to the air until dry, reduce it to a fine

powder ; to this add the Tragacanth and mix thoroughly. Lastly, with Syrup of Ginger, form a mass, to be divided into 100 troches.

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### UNGUENTA—OINTMENTS.

The difference between Ointments and Cerates consists chiefly in their consistence—the Ointments as a class being softer than the Cerates,—and being intended, generally, for rubbing in, while the Cerates are usually spread and applied like a plaster.

The British Pharmacopœia has done away with this classification, and now includes all Cerates among the Ointments.

As has been previously remarked of Cerates, it seems strange that no attempt was made by the revisers of the 1880 Pharmacopœia, to introduce Petrolatum as a base for Ointments in the place of Lard ; for experience has shone its great superiority over it as an Ointment base, and it is now being generally used by pharmacists.

White and amber or yellow Petrolatum are now furnished by manufacturers ; and it is advisable that druggists should use, in making their Ointments, the color that will best correspond with the color of the Ointments as they have been formerly made,—for instance, simple Ointment that has been made with lard and yellow wax, and dark colored ointments generally, may be made with yellow Petrolatum, while those that have been made with Lard or Benzoinated Lard, if they are white or light colored when finished should be made with white Petrolatum.

A number of new Ointments have been introduced and several that were formerly officinal omitted in the new revision ; and while the proportions of many of them have been slightly changed to correspond to the decimal percentage, they are, as a class about the same as heretofore.

The formulæ for making Ointments with Petrolatum which follow, are mostly copied from a former supplement to *Fenner's Formulary*.

The following is a list of the additions, omissions, etc., in the present revision of the Pharmacopœia :

ADDED.  
 Unguentum Acidi Gallici,  
 Unguentum Chrysarobini,  
 Unguentum Diachylon,  
 Unguentum Iodoformi,  
 Unguentum Sulphuris  
 Alkalinum,

OMITTED.  
 Unguentum Antimonii,  
 Unguentum Canthardis,  
 Unguentum Creasoti,  
 Unguentum Hydrargyri  
 Iodidi Rubri,  
 Unguentum Iodinii Compositum,  
 Unguentum Sulphuris  
 Iodidi,  
 Unguentum Tabaci.

## TRANSFERRED.

1870.  
 Unguentum Benzoini.

1880.  
 Adeps Benzoinatus.

## UNGUENTUM.

*Ointment—Simple Ointment.*

Lard,	8 parts or ounces.
Yellow Wax,	2 parts or ounces.

“ Melt the wax and add the Lard gradually ; then stir the mixture constantly until cool.”

The 1870 and 1880 preparations are identical. In older editions of the Pharmacopœia this preparation was known as Simple Ointment, and was made with White instead of Yellow Wax.

## PETROLATUM OINTMENT.

## MADE WITH PETROLATUM.

Petrolatum,	8 ounces.
Yellow Wax,	2 ounces.

Melt the wax and Petrolatum together with gentle heat, and stir while cooling. This may be used with advantage whenever ointment is directed or prescribed. It will not become rancid, and is readily incorporated with any substance with which the officinal ointment is usually used.

## UNGUENTUM ACIDI CARBOLICI.

*Ointment of Carbolic Acid, — Carbolic Ointment.*

	1870.	1880.
Carbolic Acid	1 ounce.	1 ounce.
Ointment,	8 ounces.	9 ounces.

“ Mix them thoroughly. ”

This ointment is much stronger than manufacturers have been in the habit of furnishing as Carbolized Vaseline, Carbolized Cosmoline, etc. They are usually made to contain 3 instead of 10 per cent. of Carbolic Acid.

### UNGUENTUM ACIDI GALLICI.

#### *Ointment of Gallic Acid.*

1880.

Gallic Acid,	10 parts or 1 ounce.
Benzoinated Lard,	90 parts or 9 ounces.

“Rub the Gallic Acid with the Benzoinated Lard gradually added until they are thoroughly mixed, avoiding the use of an iron spatula.”

MADE WITH PETROLATUM.

Gallic Acid,	1 ounce.
Benzoinated Petrolatum,	9 ounces.

Rub them together until they are intimately mixed.

### UNGUENTUM ACIDI TANNICI.

#### *Ointment of Tannic Acid.*

1870

1880.

Tannic Acid, 30 grains.	Tannic Acid 51 grains.
Lard, 480 grains.	Benzoinated
	Lard, 459 grains.

“Rub the Tannic Acid with the Lard, or Benzoinated Lard, gradually added, until they are thoroughly mixed, avoiding the use of an iron spatula.”

MADE WITH PETROLATUM.

(1880 U. S. P. Standard).

Tannic Acid,	1 ounce.
Benzoinated Petrolatum,	9 ounces.

Rub them together until they are intimately mixed.

### UNGUENTUM ACONITIAE. *Br.*

#### *Ointment of Aconitia.*

This preparation is officinal in the British, but not in the U. S. Pharmacopœia. The following formula corresponds

to the British except that Benzoinated Petrolatum is used instead of Prepared Lard.

Aconitia (Aconitine),	8 grains.
Alcohol,	30 minims.
Benzoinated Petrolatum,	1 ounce av.

Dissolve the Aconitia in the Alcohol, and mix the solution thoroughly with the Benzoinated Petrolatum.

## UNGUENTUM ANTIMONII.

### *Ointment of Antimony.*

1870.

Tartrate of Antimony and Potassium	
in very fine powder,	100 grains.
Lard,	400 grains.

“Rub the Tartrate of Antimony and Potassium with the Lard gradually added, until they are thoroughly mixed.”

Although this Ointment is no longer officinal, it is frequently prescribed. It may be made with Petrolatum instead of Lard.

## UNGUENTUM AQUÆ ROSÆ.

### *Ointment of Rose Water, — Cold Cream.*

1870.

1880.

Expressed Oil of Almond,	5 $\frac{1}{4}$ fl.ounces.	5 ounces av.
Spermaceti,	600 grains.	1 ounce av.
White Wax,	150 grains.	1 ounce av.
Rose Water,	2 $\frac{1}{2}$ fl.ounces.	3 ounces av.

“Melt together at a moderate heat the Oil, Spermaceti and Wax; then gradually add the Rose Water, stirring the mixture briskly and constantly until it is cool and continue the stirring until it has become uniformly soft and creamy.”  
1880.

All druggists who have made Cold Cream know how soon it becomes rancid when exposed.

If made with Petrolatum it will remain without change, and a much finer, smoother preparation will result. White Petrolatum should be used for this purpose, but, with the exception of color, the amber Petrolatum will do as well.

## MADE WITH PETROLATUM.

White Petrolatum,	6 ounces av.
White Wax,	1 ounce av.
Rose Water,	2½ fl. ounces.
Oil of Rose,	2 minims.

Melt the Petrolatum and Wax together by gentle heat and when the mixture begins to solidify, gradually incorporate the Rose Water and Oil of Rose with it, by beating briskly until it is cool.

## UNGUENTUM ATROPIÆ.

*Ointment of Atropia.*

This preparation is officinal in the British, but not in the U. S. Pharmacopœia. The following formula corresponds to the British, except that Benzoinated Petrolatum is used instead of Prepared Lard :

Atropia (Atropine),	8 grains.
Alcohol,	30 minims.
Benzoinated Petrolatum,	1 ounce.

Dissolve the Atropia in the Alcohol and mix the solution thoroughly with the Benzoinated Petrolatum.

## UNGUENTUM BELLADONNÆ.

*Ointment of Belladonna.*

1870.	1880.
Ext. Belladonna, 60 grains.	Ext. Belladonna, 51 grains.
Water, 30 minims.	Diluted Alcohol, 30 minims.
Lard, 420 grains.	Benzoinated Lard, 428 grains.

“ Rub the Extract with the water until uniformly soft, then gradually add the Lard and thoroughly mix them.”

“ Rub the Extract with the Diluted Alcohol until uniformly soft, then gradually add the Lard and mix thoroughly.”

## MADE WITH PETROLATUM.

Extract of Belladonna,	1 ounce av.
Diluted Alcohol,	½ fl. ounce.
Benzoinated Petrolatum,	7 ounces av.

Rub the Extract with the Diluted Alcohol in a warm mortar until uniformly soft, and gradually incorporate with it the Petrolatum, by rubbing them together.



## UNGUENTUM BENZOINI.

*Ointment of Benzoin—1870.**Benzoinated Lard.—1880.*

1870.

1880

Tincture Benzoin, 2 fl.ozs.  
Lard, 17½ ozs. av.

Benzoin, 2 parts.  
Lard, 100 parts.

“Melt the Lard by means of a water-bath, add the Tincture of Benzoin, constantly stirring, and when the Alcohol has evaporated remove the Ointment from the water bath and stir while cooling.”

As prepared by this formula it is claimed that the preparation caused more irritation to the skin than when Benzoin was digested in the melted Lard, therefore it is changed as shown in the 1880 formula.

“Melt the Lard by means of a water-bath and having loosely tied the Benzoin (in coarse powder) in a piece of coarse muslin, suspend it in the melted Lard, and, stirring them together frequently, continue the heat for two hours, covering the vessel and not allowing the temperature to rise above 60° C. (140° F.) Lastly having removed the Benzoin, strain the Lard and stir while cooling.”

Following the alphabetical arrangement of the 1880 Pharmacopœia this preparation will be found under its new title, *Adeps Benzoinatus*; but, as it belongs properly with the ointments, it is also given here.

## BENZOINATED PETROLATUM.

White (or amber Petrolatum,)	15 ounces.
White (or yellow wax) <i>q. s.</i> or	1 ounce.
Benzoin, in coarse powder,	¼ ounce.

Melt the Wax and Petrolatum together, and, having tied the Benzoin loosely in a piece of coarse muslin, suspend it in the melted mixture, stirring them frequently and continuing the heat for two hours at a temperature not exceeding 60° C. (150° F.); then remove the Benzoin, strain, and stir while cooling.

The amount of wax used should vary a little to correspond with the melting point of the Petrolatum, one ounce being the amount required for Petrolatum melting at 120° F., and about one-fourth more for that which melts at 104° F. —the object being to have the preparation about the consistence of Lard.

The White Petrolatum with White Wax makes a beautiful ointment, which remains fresh for any length of time. If made with the Amber Petrolatum and Yellow Wax, it is just as good every way except in color.

### UNGUENTUM CANTHARIDIS.

*Ointment of Cantharides.*

1870.

This ointment is no longer officinal, but as it may be still called for, the 1870 formulæ is given.

Cantharides Cerate,	120 grains.
Resin Cerate,	360 grains.

“Mix them thoroughly.”

### UNGUENTUM CETACEI. *Br.*

*Ointment of Spermaceti.*

This ointment is officinal in the British Pharmacopœia, but possesses no advantages over Simple Ointment, and is not so good in any respect as Petrolatum Ointment or Benzoinated Petrolatum. The British formula is as follows:

Spermaceti,	5 ounces av.
White Wax,	2 ounces av.
Almond Oil (expressed),	19 fl.ounces.

“Melt together with a gentle heat, remove the mixture, and stir constantly while it cools.”

This also may be made with:

Petrolatum,	4 ounces.
Spermaceti,	1 ounce.

Melt them together and stir while cooling.

### UNGUENTUM CHRYSAROBINI.

*Chrysarobin Ointment.*

1880.

Chrysarobin,	10 parts or 60 grains.
Benzoinated Lard,	90 parts or 540 grains.

“Rub the Chrysarobin with the Benzoinated Lard gradually added, until they are thoroughly mixed.”

This is a new officinal, made from “Goa Powder,” which has had some reputation in the treatment of skin diseases.

It may be made with Benzoinated Petrolatum instead of Lard. It is better made by heating the ingredients together.

# UNGUENTUM CREASOTI.

## *Ointment of Creasote.*

1870.

This Ointment is no longer officinal, its place having been supplied by Ointment of Carbolic Acid. It may, however, be called for, so the formula is given.

Creasote,	30 minims.
Lard,	480 grains.

“Mix them thoroughly.”

Petrolatum may be used instead of Lard.

# UNGUENTUM DIACHYLON.

## *Diachylon Ointment.*

1880.

Lead Plaster,	60 parts or 6 ounces av.
Olive Oil,	39 parts or 4 fl.ounces.
Oil of Lavender,	1 part or 75 minims.

“Melt together the Lead Plaster and Olive Oil at a moderate heat; then, having permitted the mass to become partly cool, incorporate with it the Oil of Lavender, and stir constantly until cold.”

Petrolatum may be used in place of the Olive Oil, but the resulting preparation will be of firmer consistence, although this is rather an improvement than otherwise.

## MADE WITH PETROLATUM.

Lead Plaster,	6 ounces av.
Petrolatum,	4 ounces av.
Oil of Lavender,	75 minims.

Melt the Lead Plaster and Petrolatum together at a moderate heat, and when cool enough, add the Oil of Lavender and stir until cold.

# UNGUENTUM GALLÆ.

## *Ointment of Nutgall.*

1870.

1880.

Nutmall, in No. 80 powder,	60 grs.	Nutmall, in No. 80 powder,	48 grs.
Lard,	420 grs.	Benzoinated Lard,	432 grs.

“Rub the Nutgall with the Lard or Benzoinated Lard, gradually added until they are thoroughly mixed.”

# UNGUENTUM GALLÆ CUM OPIO. *Br.*

## *Ointment of Nutgall and Opium.*

This Ointment, although not officinal in the U. S., is much more frequently prescribed than the preceding one. The following is the same as the British formula, except that Benzoinated Petrolatum is used instead of the Benzoinated Lard :

Nutmall, in No. 80 powder,	80 grains.
Opium, in No. 80 powder,	37 grains.
Benzoinated Petrolatum,	1 ounce av.

Rub the powders thoroughly with the Benzoinated Petrolatum.

# UNGUENTUM HYDRARGYRI.

## *Mercurial Ointment (Blue Ointment?).*

	1870.	
Mercury,		24 ounces.
Lard,		
Suet, each,		12 ounces.

“Rub the Mercury with an ounce of the Suet, and a small portion of the Lard until the globules cease to be visible ; then add the remainder of the Lard and of the Suet softened with a gentle heat, and thoroughly mix them.”

	1880.	
Mercury,	450 parts or $4\frac{1}{2}$ ounces.	
Lard,	225 parts or $2\frac{1}{4}$ ounces.	
Suet,	225 parts or $2\frac{1}{4}$ ounces.	
Compound Tincture of Benzoin,	40 parts or 3 fl.drachms.	
Mercurial Ointment ( $\frac{1}{2}$ Mercury),	100 parts or 1 ounce.	

“Mix the Mercury with the Tincture of Benzoin in a mortar, add the Mercurial Ointment, and triturate the mixture until globules of Mercury cease to be visible ; then add the Lard and Suet previously melted together and partially cooled, and continue the trituration until globules of Mercury cease to be visible under a magnifying power of ten diameters.”

## MADE WITH PETROLATUM.

Mercury,	$4\frac{1}{2}$ ounces.
Petrolatum,	3 ounces.
Yellow Wax,	$1\frac{1}{2}$ ounces.
Compound Tincture of Benzoin,	3 fl.drachms.
Mercurial Ointment,	1 ounce.

Mix the Mercury with the Compound Tincture of Benzoin in a mortar, add the Mercurial Ointment (which should contain 50 per cent. of Mercury), triturate the mixture until globules of Mercury cease to be visible. Then add the Petrolatum and Yellow Wax previously melted together and partly cooled, and triturate with the mixture in the mortar, until globules of Mercury cease to be visible under a magnifying power of ten diameters.

Mercurial Ointment, made with one-third, instead of one-half, Mercury is generally sold by druggists, but should not be dispensed on physicians' prescriptions. This strength may be made by mixing with the 50 per cent. ointment one-half its weight of Petrolatum Ointment.

### UNGUENTUM HYDRARGYRI AMMONIATI.

*Ointment of Ammoniated Mercury (White Precipitate).*

1870.

Ammoniated Mercury  
in very fine powder, 40 grs.  
Ointment, 480 grs.

1880.

Ammoniated Mercury  
in very fine powder, 52 grs.  
Benzoinated Lard, 468 grs.

“Rub the Ammoniated Mercury with the Ointment or Benzoinated Lard until they are thoroughly mixed.”

#### MADE WITH PETROLATUM.

Ammoniated Mercury, in very fine powder,

Benzoinated Petrolatum,

1 ounce.

9 ounces.

Rub the Ammoniated Mercury with the Benzoinated Petrolatum until they are thoroughly mixed.

### UNGUENTUM HYDRARGYRI COMPOSITUM. *Br.*

*Compound Ointment of Mercury.*

The British Formula uses Yellow Wax and Olive Oil instead of the Petrolatum Ointment as here directed.

Mercurial Ointment,

6 ounces.

Petrolatum Ointment,

6 ounces.

Camphor, in fine powder,

1½ ounces.

Melt the Petrolatum Ointment, dissolve in it the Camphor, and when partly cool mix it thoroughly with the Mercurial Ointment.

# UNGUENTUM HYDRARGYRI IODIDI RUBRI.

## *Ointment of Red Iodide of Mercury.*

1870.

This Ointment was officinal in the 1870 Pharmacopœia but is omitted in the present revision. The formula is as follows :

Red Iodide of Mercury, in fine powder,	16 grains.
Ointment,	480 grains.

“Rub the Iodide of Mercury with the Ointment, gradually added, until they are thoroughly mixed.”

Petrolatum Ointment may be used instead of Ointment.

# UNGUENTUM HYDRARGYRI NITRATIS.

## *Ointment of Nitrate of Mercury (Citrine Ointment).*

1870.

Mercury,	1½ ounces.
Nitric Acid,	3½ ounces.
Lard,	16½ ounces.

“Dissolve the Mercury in the Acid; then heat the Lard in an earthen vessel, and, when the temperature reaches 200° F., remove it from the fire. To this add the Mercurial Solution, and, with a wooden spatula, stir constantly so long as effervescence continues, and afterwards occasionally until the Ointment stiffens.”

1880.

Mercury,	7 parts or 1½ ounces.
Nitric Acid,	17 parts or 3⅔ ounces.
Lard Oil,	76 parts or 16⅓ ounces.

“Heat the Lard Oil in a glass or porcelain vessel to a temperature of 70°C. (158°F.); then add without stirring, 7 parts or 1½ ounces of Nitric Acid, and continue the heat so long as a moderate effervescence continues, and allow the mixture to cool. Dissolve the Mercury in the remainder of the Nitric Acid and with the aid of sufficient heat to prevent the solution from crystallizing, add this solution to the mixture before it has become entirely cold, and mix them thoroughly, avoiding the use of an iron spatula.”

There has been considerable discussion regarding the use of petrolatum in making this ointment, and the conclusion is, that it is not admissible, for the reason, that the reaction which is desired between the Nitric Acid and the olein of the Lard Oil, producing elaidin, does not occur with petrolatum.

### UNGUENTUM HYDRARGYRI OXIDI FLAVI.

*Ointment of Yellow Oxide of Mercury.*

	1870.	1880.
Yellow Oxide of Mercury, in very fine powder,	60 grains.	48 grains.
Ointment,	420 grains.	432 grains.

“Rub the Oxide of Mercury with the Ointment, gradually added, until they are thoroughly mixed.”

MADE WITH PETROLATUM.

Yellow Oxide of Mercury, in very fine powder,	1 ounce.
Petrolatum Ointment,	9 ounces.

Rub the Oxide of Mercury with the Ointment, gradually added, until they are thoroughly mixed.

### UNGUENTUM HYDRARGYRI OXIDI RUBRI.

*Ointment of Red Oxide of Mercury (Red Precipitate.)*

	1870.	1880.
Red Oxide of Mercury (Red Precipitate), in very fine powder,	60 grains.	48 grains.
Ointment,	420 grains.	432 grains.

“Rub the Oxide of Mercury with a small quantity of the Ointment until a perfectly smooth mixture is obtained; then gradually add the remainder of the Ointment and mix thoroughly.” 1880.

MADE WITH PETROLATUM.

Red Precipitate, in very fine powder,	1 ounce.
Petrolatum Ointment,	9 ounces.

Rub the Red Precipitate with a small portion of the Ointment and then gradually with the remainder until thoroughly mixed. Made with Petrolatum, this Ointment



remains permanent and unchanged, which is a great advantage over the officinal preparation.

### UNGUENTUM IODI.

*Unguentum Iodinii*—1870—*Iodine Ointment*.

1870.		1880.	
Iodine,	20 grains.	Iodine,	20 grains.
Iodide of Potas-		Iodide of Potas-	
sium,	4 grains.	sium,	5 grains.
Water,	6 minims.	Water,	10 minims.
Lard,	480 grains.	Benzoinated	
		Lard,	475 grains.

“Rub the Iodine and Iodide of Potassium first with the Water and then with the Lard or Benzoinated Lard, gradually added, until they are thoroughly mixed, avoiding the use of an iron spatula.” 1880.

The use of Petrolatum in making this Ointment is not recommended, as with it a greenish-black ointment results, and the change that occurs is not yet well ascertained.

### UNGUENTUM IODINII COMPOSITUM.

*Compound Iodine Ointment*.

1870.	
Iodine,	15 grains.
Iodide of Potassium,	30 grains.
Water,	30 minims.
Lard,	480 grains.

“Rub the Iodine and Iodide of Potassium first with Water, and then with the Lard, until they are thoroughly mixed.”

This Ointment is no longer officinal, and is, in fact, unnecessary; but, having been officinal, it may sometimes be prescribed.

### UNGUENTUM IODOFORMI.

*Iodoform Ointment*.

1880.		
Iodoform in very fine powder,	10 parts or	50 grains.
Benzoinated Lard,	90 parts or	450 grains.

“Rub the Iodoform with the Benzoinated Lard, gradually added until they are thoroughly mixed.”

## MADE WITH PETROLATUM.

Iodoform, in very fine powder,	1 ounce.
Benzoinated Petrolatum,	9 ounces.

Rub the Iodoform with a portion of the Benzoinated Petrolatum, and then with the remainder, gradually added until thoroughly mixed.

## UNGUENTUM MEZEREI.

*Mezereum Ointment.*

	1870.	1880.
Fluid Extract of Mezereum,	1 fl.ounce.	1 fl.ounce.
Lard,	3½ tr.ounces.	3¼ ounces av.
Yellow Wax,	240 grains.	½ ounce av.

“Melt together the Lard and the Wax with a moderate heat, add the Fluid Extract, and stir the mixture constantly until the Alcohol has evaporated ; then continue to stir until cool.”

## MADE WITH PETROLATUM.

Fluid Extract of Mezereum,	1 fl.ounce.
Petrolatum,	3½ ounces av.
Yellow Wax	½ ounce av.

Melt the Petrolatum and Yellow Wax together, add the Fluid Extract and stir the mixture constantly until the Alcohol has evaporated ; then continue to stir until cool.

## UNGUENTUM PICIS LIQUIDÆ.

*Tar Ointment.*

The 1870 and 1880 Formulæ for this Ointment are the same.

Tar,	} each, equal parts.
Suet,	

“Mix the Tar with the Suet, previously melted with a moderate heat, and, having strained the mixture through muslin, stir it constantly until cool.”

This Ointment is not improved by using Petrolatum ; but if it is used, one-half as much Yellow Wax as is taken of Petrolatum should be used to give it the proper consistence.

## UNGUENTUM PLUMBI ACETATIS.

### *Ointment of Acetate of Lead.*

This Ointment, although not officinal in the U. S. is frequently prescribed. The following is the same as the British, except that Benzoinated Petrolatum is used instead of Benzoinated Lard.

Acetate of Lead in very fine powder, 12 grains.

Benzoinated Petrolatum, 1 ounce av.

Mix them thoroughly.

The Cerate of Sub-Acetate of Lead is generally preferred.

## UNGUENTUM PLUMBI CARBONATIS.

### *Ointment of Carbonate of Lead.*

1870.

1880.

Carbonate of Lead, 60 grains.		Carbonate of Lead, 48 grains.
Ointment, 420 grains.		Benzoinated Lard, 432 grains.

“Rub the Carbonate of Lead (in fine powder) with the Ointment or Benzoinated Lard, gradually added, until they are thoroughly mixed.”

#### MADE WITH PETROLATUM.

Carbonate of Lead, in fine powder, 1 ounce.

Benzoinated Petrolatum, 9 ounces.

Rub the Carbonate of Lead with the Benzoinated Petrolatum, gradually added, until they are thoroughly mixed.

## UNGUENTUM PLUMBI IODIDI.

### *Ointment of Iodide of Lead.*

1870.

1880.

Iodide of Lead, 60 grains.		Iodide of Lead, 48 grains.
Ointment, 420 grains.		Benzoinated Lard 432 grains.

“Rub the Iodide of Lead (in fine powder) with the Ointment or Benzoinated Lard gradually added, until they are thoroughly mixed.”

#### MADE WITH PETROLATUM.

Iodide of Lead in very fine powder, 1 ounce.

Benzoinated Petrolatum, 9 ounces.

“Rub the Iodine of Lead with the Benzoinated Petrolatum, gradually added, until they are thoroughly mixed.”

# UNGUENTUM POTASSII IODIDI.

## *Ointment of Iodide of Potassium.*

1870.  
Iodide of Potassium, 60 grains.  
Water, boiling, 30 minims.  
Lard, 420 grains.

“ Dissolve the Iodide of Potassium in the water in a warm mortar, then add the Lard gradually and thoroughly mix them.”

1880.  
Iodide of Potassium, 61 grains.  
Hyposulphite of Sodium, 5 grains.  
Boiling water 30 minims.  
Benzoinated Lard, 413 grains.

“ Dissolve the Iodide of Potassium and the Hyposulphite of Sodium in the Boiling Water in a warm mortar ; then gradually add the Benzoinated Lard and mix thoroughly.”

The Hyposulphite of Sodium is added in the 1880 formula to prevent the discoloration which formerly occurred in this Ointment after standing.

## MADE WITH PETROLATUM.

Iodide of Potassium, in fine powder, 60 grains.  
Hyposulphite of Sodium, in fine powder 5 grains.  
Boiling Water, 30 minims.  
Benzoinated Petrolatum, 413 grains.

Dissolve the Iodine of Potassium and the Hyposulphite of Sodium with the Boiling water in a warm mortar ; gradually add the Benzoinated Petrolatum and mix thoroughly.

# UNGUENTUM STRAMONII.

## *Stramonium Ointment.*

1870.  
Extract of Stramonium, 60 grains.  
Water, 30 minims.  
Lard, 420 grains.

1880.  
Extract of Stramonium, 51 grains.  
Water, 25 minims.  
Benzoinated Lard 433 grains.

“ Rub the Extract with the Water until uniformly soft ; then gradually add the Lard, or Benzoinated Lard, and mix them thoroughly.”

## MADE WITH PETROLATUM.

Extract of Stramonium,	51 grains.
Water,	25 minims.
Benzoinated Petrolatum,	433 grains.

Rub the Extract with the Water until uniformly soft ; then gradually add the Benzoinated Petrolatum and mix them thoroughly.

## UNGUENTUM SULPHURIS.

*Sulphur Ointment.*

1870.		1880.	
Sublimed Sulphur,	160 grains.	Sublimed Sulphur,	144 grains.
Lard,	320 grains.	Benzoinated Lard,	336 grains.

“ Rub the Sulphur with the Lard or Benzoinated Lard, gradually added, until they are thoroughly mixed.”

## MADE WITH PETROLATUM.

Sublimed Sulphur,	3 ounces.
Petrolatum,	7 ounces.

Mix them thoroughly, by rubbing them together.

## UNGUENTUM SULPHURIS ALKALINUM.

*Alkaline Sulphur Ointment.*

1880.	
Washed Sulphur,	96 grains.
Carbonate of Potassium,	48 grains.
Water,	24 minims.
Benzoinated Lard,	312 grains.

“ Rub the Sulphur with the Carbonate of Potassium and the water, gradually add the Benzoinated Lard and mix thoroughly.”

This may be made with Benzoinated Petrolatum instead of Benzoinated Lard.

## UNGUENTUM SULPHURIS IODIDI.

*Ointment of Iodide of Sulphur.*

1870.	
Iodide of Sulphur, in very fine powder,	30 grains.
Lard,	480 grains.

“Rub the Iodide of Sulphur with the Lard, gradually added, until they are thoroughly mixed.”

Although this Ointment is no longer officinal it is frequently prescribed. It may be made with Benzoinated Petrolatum instead of Lard.

## UNGUENTUM TABACI.

### *Ointment of Tobacco.*

1870.

Tobacco, in fine powder,	$\frac{1}{2}$ ounce.
Lard,	8 ounces.
Water, a sufficient quantity.	

“Moisten the Tobacco with a little Water, introduce it into a conical glass percolator, and, having pressed it firmly, pour water upon it until 4 fluid ounces of liquid have passed. Evaporate this Liquid to the consistence of a soft extract, and mix it thoroughly with the Lard.”

This may be made with Petrolatum instead of Lard.

## UNGUENTUM VERATRINÆ.

### *Veratrine Ointment.*

1870.

Veratria,	20 grains.
Lard,	480 grains.

“Rub the Veratria with a little of the Lard; then gradually add the remainder, and thoroughly mix them.”

1880.

Veratrine,	20 grains.
Alcohol,	35 minims.
Benzoinated Lard,	480 grains.

“Rub the Veratrine with the Alcohol in a warm mortar until dissolved; then gradually add the Benzoinated Lard, and mix thoroughly.”

### MADE WITH PETROLATUM.

Veratrine,	20 grains.
Alcohol,	35 minims.
Benzoinated Petrolatum,	480 grains.

“Rub the Veratrine with the Alcohol in a warm mortar, until dissolved; then gradually add the Benzoinated Petrolatum, and mix thoroughly.”

## UNGUENTUM ZINCI OXIDI.

### *Oxide of Zinc Ointment.*

1870.

Oxide of Zinc, 80 grs.  
Benzoinated Lard, 400 grs.

“Rub the Oxide of Zinc with the Benzoinated Lard, gradually added, until they are thoroughly mixed.”

1880.

Oxide of Zinc, 96 grs.  
Benzoinated Lard, 384 grs.

“Rub the Oxide of Zinc with an equal weight of Benzoinated Lard, previously melted, until the mixture is perfectly smooth; then add the remainder of the Benzoinated Lard, and mix thoroughly.”

### MADE WITH PETROLATUM.

Oxide of Zinc,	2 ounces.
Benzoinated Petrolatum,	8 ounces.

Rub the Oxide of Zinc with an equal weight of Benzoinated Petrolatum in a warm mortar until they are thoroughly and smoothly mixed; then add the remainder of the Benzoinated Petrolatum, and mix them thoroughly.

## VERATRINA — VERATRINE.

The termination of these names is changed, as above, in common with other Alkaloids. It was in the former revision *Veratria* in both the Latin and English.

## VINA MEDICATA — MEDICATED WINES.

A certain class of Medicated Wines, which have been introduced by enterprising manufacturers, have, of late, become quite popular with physicians and the public, and a few of them have been made officinal in the present pharmacopœia, although they do not correspond with those which are popular in the market. Owing to the great



variety and difference in alcoholic strength and quality of wines which are furnished to druggists, their preparations cannot be so uniform and stable as many other galenicals. The Wine directed to be used in the present pharmacopœia, however, obviates, in a measure, the difficulties that have been experienced in this class of preparations, by furnishing a wine of nearly definite alcoholic strength, in place of the variable standard formerly directed. Formulas for the popular Medicated Wines, known as Elegant Preparations, will be found in FENNER'S FORMULARY.

The following Wines have been added to or omitted from the official list in the present revision of the pharmacopœia:

## ADDED.

Vinum Album Fortius.  
 Vinum Aromaticum.  
 Vinum Ferri Amarum.  
 Vinum Ferri Citratis.

## OMITTED.

Vinum Tabaci.

## VINUM ALBUM FORTIUS.

*Stronger White Wine.*

1880.

White Wine,	7 parts or 55 fl.ounces.
Alcohol,	1 part or 9½ fl.ounces.

“Mix them.” “When tested for alcohol as described under White Wine, Stronger White Wine should contain not less than twenty per cent., nor more than twenty-five per cent., of Absolute Alcohol by weight.”

The object of adding Alcohol is to have a wine for pharmaceutical purposes that will contain a definite and sufficient quantity of alcohol to dissolve and preserve medicinal agents with which it is combined. This preparation is used as the base of all the medicinal wines of the 1880 pharmacopœia, in place of “Sherry Wine,” which was directed in all the formulas of the 1870 revision. While this change is no doubt beneficial in a general sense, the present preparations will not necessarily correspond in flavor nor appearance with those that have been formerly prepared, for any wine except a Red Wine may be used.

## VINUM ALOES.

*Wine of Aloes.*

1870.	1880.
Socotrine Aloes, 480 grains.	Purified Aloes, 1 ounce av.
Cardamom, 60 grains.	Cardamom, 73 grains.
Ginger, 60 grains.	Ginger, 73 grains.
Sherry Wine, 1 pint.	Stronger White Wine sufficient to make a pint.

“Mix the Aloes, Cardamom and Ginger, and reduce them to a moderately coarse powder, macerate the powder with 13 ounces of the Wine for seven days with occasional agitation, and filter through paper, adding through the filter enough Wine to make a pint of the finished liquid.” 1880.

## VINUM ANTIMONII.

*Wine of Antimony.*

1870.	1880.
Tartarate of Antimony and Potassium, 32 grains.	Tartarate of Antimony and Potassium, 29 grains.
Boiling Distilled Water, 1 fl.ounce.	Boiling Distilled Water, 1 fl.ounce.
Sherry Wine, sufficient to make a pint.	Stronger White Wine, sufficient to make a pint.

“Dissolve the Tartarate of Antimony and Potassium in the Water, and while the solution is hot, add 10 fluidounces of Wine, and filter through paper, adding through the filter enough Wine to make the filtered liquid measure a pint.” 1880.

## VINUM AROMATICUM.

*Aromatic Wine.*

1880.

Lavender, Origanum, Peppermint, Rosemary, Sage, Wormwood,	} each	72 grains.
Stronger White Wine, sufficient to make a pint.		

“ Mix the solid ingredients and reduce them to a coarse powder ; moisten the powder with a fluidounce of Stronger White Wine, pack it moderately in a conical glass percolator, and gradually pour enough Stronger White Wine upon it to make the filtered liquid measure a pint.”

This is somewhat similar to the *Vin Aromatique* of the French Codex. It is never used internally.

# VINUM COLCHICI RADICIS.

## *Wine of Colchicum Root.*

1870.	1880.
Colchicum Root, $13\frac{1}{8}$ oz. av.	Colchicum Root, $13\frac{1}{4}$ oz. av.
Sherry Wine, sufficient to make 2 pints.	Stronger White Wine, sufficient to make 2 pints.

Reduce the Root to a No. 30 powder, and moisten it with 6 fl.ounces of Wine ; pack it moderately in a conical percolator, and gradually pour enough Wine upon it to make the filtered liquid measure two pints.

# VINUM COLCHICI SEMINIS.

## *Wine of Colchicum Seed.*

1870.	1880.
Colchicum Seed, $4\frac{3}{8}$ ozs. av.	Colchicum Seed, $4\frac{3}{4}$ ozs. av.
Sherry Wine, 2 pints.	Stronger White Wine sufficient to mix 2 pints.

Reduce the Seed to a No. 20 powder and macerate it for seven days with 30 fluidounces of the Wine ; then filter and add through the filter enough Wine to make two pints.

# VINUM ERGOTÆ.

## *Wine of Ergot.*

1870	1880
Fluid Extract of Ergot, 4 fl.ounces.	Ergot in No. 30 powder, $4\frac{3}{4}$ ounces av.
Sherry Wine, 28 fl.ounces.	Stronger White Wine sufficient to make 2 pints.
	“ Moisten the powder with 10 fluid ounces of Stronger White Wine, pack it moderately in a cylindrical percolator, and gradually pour enough Stronger White Wine upon it to make two pints.”

“ Mix them, and filter through paper.”

This preparation, which was formerly very much prescribed and used by physicians, is now but little employed, as the Fluid Extract is more concentrated and convenient.

## VINUM FERRI AMARUM.

### *Bitter Wine of Iron.*

1880.

Solution of Citrate of Iron and Quinine,	8 parts.
Tincture of Sweet Orange Peel,	12 parts.
Syrup,	36 parts.
Stronger White Wine,	44 parts.

To make	100 parts.
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“Mix and filter through paper.”

Few druggists keep the solution of Citrate of Iron and Quinine on hand, and if it is desired to make this preparation from the officinal formula or its equivalent, the scale salt, Citrate of Iron and Quinine may be used. The following is identical in composition with the officinal formula.

Citrate of Iron and Quinine (soluble),	580 grains.
Tincture of Sweet Orange Peel,	4 fl. ounces.
Syrup	10 fl. ounces.
Stronger White Wine	16 fl. ounces.
Water, sufficient to make,	2 pints.

To one ounce of hot Water in an evaporating dish gradually add the Citrate of Iron and Quinine, agitating it gently over a spirit lamp until the salt is dissolved, add the solution to the Tincture, then mix with the Syrup and Wine and add enough water to make the measure two pints.

This is unlike the Bitter Wine of Iron furnished by manufacturers, being much stronger of both Iron and Quinine.

Formulæ for this preparation similar to those popular on the market will be found in FENNER'S FORMULARY.

## VINUM FERRI CITRATIS.

### *Wine of Citrate of Iron.*

1880.

Citrate of Iron and Ammonium,	4 parts or	580 grains.
Tincture of Sweet Orange Peel,	12 parts or	4½ fl. ounces.
Syrup,	12 parts or	3 fl. ounces.
Stronger White Wine,	72 parts or	23 fl. ounces.

“Mix and filter through paper.”

The Citrate of Iron should be dissolved in an ounce of warm water before adding to the other ingredients.

# VINUM IPECACUANHÆ.

## *Wine of Ipecac.*

1870.	1880.
Fluid Extract of Ipecac, 2 fl.ounces.	Fluid Extract of Ipecac. 2¼ fl.ounces.
Sherry Wine, 30 fl.ounces.	Stronger White Wine, 30 fl.ounces.
“ Mix them and filter through paper.”	

# VINUM OPII.

## *Wine of Opium, Sydenham's Laudanum.*

1870.	1880.
Opium in powder, 960 grains.	Powdered Opium, 829 grains.
Cinnamon, in powder, 60 grains.	Cinnamon, in powder, 73 grains.
Cloves, in powder, 60 grains.	Cloves, in powder, 73 grains.
Sherry Wine sufficient to make a pint.	Stronger White Wine sufficient to make a pint.

“ To the mixed powders, add 14 fluidounces of the Wine and macerate the mixture for seven days with occasional agitation ; then transfer it to a filter and gradually pour enough Wine upon it to make the filtered liquid measure a pint.” 1880.

Although this preparation is now but seldom used, the difference in the strength of opium should be noted, the 1880 being about one-third weaker than the 1870.

# VINUM RHEI.

## *Wine of Rhubarb.*

1870.	1880.
Rhubarb, No. 30 powder 960 grains	Rhubarb, No. 30 powder 730 grains.
Canella, No. 30 powder 60 grains.	Calamus, No. 30 powder, 73 grains.
Sherry Wine 14 fl.ozs.	Stronger White Wine, sufficient to make a pint.
Diluted Alcohol sufficient to make a pint.	

1870.

“ Mix two fluid ounces of Diluted Alcohol with the Sherry Wine, and moisten the powders, previously mixed together, with half a fluid ounce of the mixture; then transfer them to a conical percolator and gradually pour upon them the remainder of the mixture, and afterward Diluted Alcohol, until a pint of filtered liquid is obtained.”

1880.

“ Moisten the mixed powders with two ounces of Stronger White Wine, pack the mixture in a conical glass percolator, and gradually pour enough Stronger White Wine upon it to make the filtered liquid measure a pint.”

This preparation is now about one-third weaker than formerly, and Calamus being used instead of Canella, it has a different flavor than the old preparation; but it is so little used that the difference would seldom be discerned by customers

## VINUM TABACI.

*Wine of Tobacco.*

1870.

This preparation is very properly dismissed from the officinal list. The 1870 Formula was as follows:

Tobacco, in moderately fine powder,	480 grains.
Sherry Wine,	a pint

“ Macerate for seven days with occasional agitation then express and filter through paper.”

## ZINCUM—ZINC.

Three new Salts of Zinc have been added, and one dismissed from the officinal list in the 1880 pharmacopœia. They are as follows:

## ADDED.

Zinci Bromidum,  
Zinci Iodidum,  
Zinci Phosphidum,

## OMITTED.

Zinci Oxidum Venale.

## PART IV.

### MATERIA MEDICA.

Although the pharmacopœias omit the properties, uses and doses of drugs, a work of this kind without them seems incomplete; for druggists are, as frequently as physicians, required to know them.

In this part, therefore, for convenient reference are given brief descriptions, with the properties, uses and doses of drugs and their preparations, mentioned in this volume. They are given thus in a separate section from the formulæ for the purpose of rendering the formulæ (which more directly interest druggists) more perspicuous.

No designation is made in this part between officinal and unofficinal drugs, all being arranged alphabetically by their Latin titles, their preparations being noticed under the names of the drugs. The index refers to both the Latin and common names, so that any drug or preparation may readily be found by referring to it.

The well established medicinal properties and uses only are stated, and the doses mentioned are such as investigation has shown to be a fair average of the experience of practitioners.

In the officinal preparations the old standard of doses, with which all are familiar, are adhered to as nearly as possible, and where there is no change of consequence in the new authority the old dose is retained; but where important changes in strength occur, the doses of both the 1870 and 1880 preparations are given.

**ABIES BALSAMEA—Canada Fir.**—The inner bark and balsam. The bark is aromatic, diaphoretic, astringent.

Dose of powder, 30 to 60 grains; of fluid extract, 30 to 60 grains.

**Canada Balsam.**—An exudation from the bark. Is used as a stimulating ingredient in ointments, plasters and liniments, and is given sometimes internally for coughs, etc.



**ABSINTHIUM—Wormwood.**—The leaves and flowering tops of *Artemisia Absinthium*. Aromatic bitter tonic, anthelmintic. In debility, dyspepsia, etc., and for worms; also used externally.

Dose of powder, 5 to 40 grains; of fluid extract, 5 to 40 minims.

The Oil is used in liniments.

**ABSTRACTA—Abstracts.**—Extracts combined with Sugar of Milk, representing double the strength of the drug. (See page 40.)

Doses of the abstracts are one-half the dose of the drug from which they are prepared. The following are official (1880):

Abstract of Aconite,	½ to 2	grs.	Ignatia,	½ to 1 ½	grs.
Belladonna,	½ to 2	grs.	Jalap,	10 to 15	grs.
Conium,	1 to 2	grs.	Nux Vomica,	1 to 2	grs.
Digitalis,	½ to 1	gr.	Senega,	1 to 3	grs.
Hyoscyamus,	2 to 3	grs.	Valerian,	10 to 20	grs.

**ACACIA—Gum Arabic.**—A gummy exudation from *Acacia Verek*. Demulcent. Dose, ad. lib. in solution.

The official mucilage and syrup are used chiefly as vehicles for other remedies.

**ACACIA JUREMA—Adstringens.**—The bark. A powerful astringent.

Dose of powder, 15 to 40 grains; of fluid extract, 15 to 40 minims.

**ACALYPHA VIRGINICA—Mercury Weed.**—The herb. Expectorant, diuretic, etc.

Dose of powder, 15 to 40 grains; of fluid extract, 15 to 40 minims.

**ACANTHUS MOLLIS—Acanthus, Breech.**—Leaves and root. The leaves are used in diarrhoea, etc., as an emollient, the root in epilepsy.

Dose of powdered leaves or root; 1 to 3 drachms, of fluid extract, 1 to 3 fl.drachms.

**ACETA—Vinegars.**—Preparations made with Diluted Acetic Acid as a menstruum. (See page 48.)

Doses of the Official Vinegars are as follows:

	1870.	1880.
Acetum Lobeliæ,	10 to 50 m.	15 to 60 m.
Acetum Opii,	5 to 10 m.	8 to 15 m.
Acetum Sanginariæ,	15 to 30 m.	20 to 40 m.
Acetum Scillæ,	10 to 20 m.	15 to 25 m.

#### UNOFFICIAL VINEGARS.

Acetum Digitalis (1 to 10), 20 to 60 m.

Acetum Ergota (1 to 10), 30 to 90 m.

Diluted Acetic Acid is the present official Vinegar.

**ACHILLEA—Yarrow.**—The flowering tops and leaves of *Achillea Millefolium*, Aromatic bitter tonic, stomachic. In female weakness, leucorrhœa, etc.

Dose of powder, 30 to 60 grains; of fluid extract, 30 to 60 minims.

**ACIDA—Acids.**—In Chemistry, substances which may combine with bases to form salts are called acids. (For sp. gr. and absolute percentage of acids see page 50.)

**ACIDUM ACETICUM—Acetic Acid.**—( $\text{HC}_2\text{H}_3\text{O}_2$ ; 60). A liquid composed of 36 per cent. of absolute Acetic Acid and 64 per cent. of Water. Prepared from wood, etc., by destructive distillation.

**ACIDUM ACETICUM DILUTUM**—Diluted Acetic Acid.—The present officinal Vinegar. (See page 50.)

**ACIDUM ACETICUM GLACIALE**—Glacial Acetic Acid.—Nearly absolute Acetic Acid; solid at  $15^{\circ}\text{C}$ .

**ACIDUM ARSENIOSUM**—Arsenious Acid.—( $\text{As}_2\text{O}_3$ ; 197.8.) White Arsenic or Arsenious Oxide. (See Arsenicum.)

**ACIDUM BENZOICUM**—Benzoic Acid.—( $\text{HC}_7\text{H}_5\text{O}_2$ ; 122.) Sublimed from Benzoin, also made artificially. Stimulant, antiseptic, etc. Dose, 5 to 30 grains.

**ACIDUM BORICUM**—Boric or Boracic Acid.—( $\text{H}_3\text{BO}_3$ ; 62.) Antiseptic. Used externally; also given in doses of from 10 to 30 grains.

**ACIDUM CARBOLICUM**—Carbolic Acid or Phenol.—( $\text{C}_6\text{H}_5\text{HO}$ ; 94.) From Coal-Tar; purified from Crude Carbolic Acid. Antiseptic, disinfectant. Used externally; and given in solution, in doses of  $\frac{1}{2}$  to 1 grain. Carbolic Acid Water, and Glycerite of Carbolic Acid were officinal in the 1870 pharmacopœia.

**ACIDUM CHROMICUM**—Chromic Acid.—( $\text{Cr. O}_3$ ; 100.4.) Used as a caustic for venereal growths, ulcers, warts, etc.; also used in solution as an antiseptic.

**ACIDUM CITRICUM**—Citric Acid.—( $\text{H}_3\text{C}_6\text{H}_5\text{O}_7\text{H}_2\text{O}$ ; 210.) Prepared from lemon and lime juice; used in scurvy and many other diseases.

Dose of syrup,  $\frac{1}{2}$  to 2 ounces.

**ACIDUM (GALLICUM)**—Gallic Acid.—( $\text{HC}_7\text{H}_5\text{O}_5\text{H}_2\text{O}$ ; 188.) Prepared from nutgalls. Astringent. Used externally, and given in doses of from 1 to 10 grains or more. Ointment of Gallic Acid is officinal.

Pyrogallic Acid is made from Gallic Acid or Extract of Nutgalls, by sublimation. It is used mainly as a mordant for hair dye.

**ACIDUM HYDROBROMICUM DILUTUM**—Diluted Hydrobromic Acid.—Contains 10 per cent. of absolute Hydrobromic Acid. Used for the same diseases as Bromide of Potassium.

Dose,  $\frac{1}{2}$  to 1 fl.drachm.

**ACIDUM HYDROCHLORICUM**—Hydrochloric (Muriatic) Acid.—( $\text{HCl}$ ; 36.4) A liquid containing 31.9 per cent. of absolute Hydrochloric Acid and 68.1 per cent. of Water.

**ACIDUM HYDROCHLORICUM DILUTUM**—Diluted Hydrochloric Acid. (See page 51.) Aids digestion. Used in dyspepsia, etc., also externally.

Dose, 5 to 30 minims, diluted with water.

**ACIDUM HYDROCYANICUM DILUTUM**—Diluted Hydrocyanic Acid, Prussic Acid. (See page 51.) Sedative poison. Used in nervous diseases, coughs, etc.

Dose, 1 to 3 minims in mixtures.

**ACIDUM LACTICUM**—Lactic Acid.—( $\text{HC}_3\text{H}_5\text{O}_3$ ; 90.) The acid of sour milk. Used in dyspepsia, indigestion, etc.

Dose, 15 to 30 minims.

**ACIDUM NITRICUM**—Nitric Acid.—( $\text{HNO}_3$ ; 63.) "A liquid composed of 69.4 per cent. of absolute Nitric Acid, and 30.6 per cent. of Water."

**ACIDUM NITRICUM DILUTUM**—Diluted Nitric Acid.—Tonic, etc.

Dose, 2 to 20 minims, diluted.

**ACIDUM NITROHYDROCHLORICUM**—Nitrohydrochloric or Nitromuriatic Acid.—(See page 51.) Used medicinally mainly for baths.

**ACIDUM NITROHYDROCHLORICUM DILUTUM**—Diluted Nitrohydrochloric or Nitromuriatic Acid. Acid tonic, etc.

Dose, 5 to 25 minims, diluted.

**ACIDUM OLEICUM**—Oleic Acid.—( $\text{HC}_{18}\text{H}_{33}\text{O}_2$ ; 282.) Prepared from fat or fatty oils, and used for preparing oleates.

**ACIDUM PHOSPHORICUM**—Phosphoric Acid.—( $\text{H}_3\text{PO}_4$ ; 98.) A 50 per cent. solution of Orthophosphoric Acid. (See page 52.)

**ACIDUM PHOSPHORICUM DILUTUM**—Diluted Phosphoric Acid. (See page 52.) Nerve tonic and vitalizer. In dyspepsia, indigestion, night sweats, weakness, etc.

Dose, 8 to 15 minims, diluted.

**ACIDUM PHOSPHORICUM GLACIALE**—Glacial Phosphoric Acid.—A solid metaphosphoric acid.

**ACIDUM PICRICUM**—Picric or Carbazotic Acid.—Used in ague and trichinosis.

Dose,  $\frac{1}{6}$  to  $1\frac{1}{2}$  grain.

**ACIDUM PYROLIGNOSUM**—Pyrolignous Acid.—Wood Vinegar. Formerly used in gangrene, ulcers, etc., but since the introduction of Carbolic Acid, but little employed.

**ACIDUM SALICYLICUM**—Salicylic Acid.—( $\text{HC}_7\text{H}_5\text{O}_3$ ; 138.) Prepared from Oil of Wintergreen, or Salicin, also from Carbolate of Sodium. Antiseptic, antiferment. Used externally, and given in doses of 10 to 60 grains, for fevers, malaria, rheumatism, etc.

**ACIDUM SULPHURICUM**—Sulphuric Acid.—( $\text{H}_2\text{SO}_4$ ; 98.) "A liquid composed of not less than 96 per cent. of absolute Sulphuric Acid, and not more than 4 per cent. of Water."

**ACIDUM SULPHURICUM AROMATICUM**—Aromatic Sulphuric Acid.—Elixir of Vitriol. (See page 53.) Tonic, astringent. Used in hemorrhage, night-sweats, etc.

Dose, 10 to 20 minims, diluted.

**ACIDUM SULPHURICUM DILUTUM**—Diluted Sulphuric Acid. (See page 52.) Tonic, astringent.

Dose, 10 to 30 minims, diluted.

**ACIDUM SULPHUROSUM**—Sulphurous Acid. (See page 53.) Mainly used externally in skin diseases, etc.

Given in doses of  $\frac{1}{2}$  to 2 fl.drachms, diluted.

**ACIDUM TANNICUM**—Tannic Acid.—( $\text{C}_{14}\text{H}_{10}\text{O}_9$ ; 322.) Prepared from Nutgalls. Powerful astringent. Used externally and internally in hemorrhage, diseased mucous surfaces, etc.

Dose, 3 to 5 grains in pill or capsule.

Glycerite of Tannin was officinal in the 1870 pharmacopœia, but has been dismissed.

**ACIDUM TARTARICUM**—Tartaric Acid.—( $\text{H}_2\text{C}_4\text{H}_4\text{O}_6$ ; 150.) Prepared from the Tartar of Wine. Used for the same purposes as Citric Acid.

**ACONITUM—Aconite.**—Monkshood, Wolfsbane. The root and leaves of *Aconitum Napellus*. The root only is officinal. Arterial sedative. In fevers, inflammation, etc.

Dose of powd. root,  $\frac{1}{2}$  to 2 grains; of powd. leaves, 1 to 4 grains; of abstract of root,  $\frac{1}{2}$  to 3 grains; of extract of root, 1880,  $\frac{1}{12}$  to  $\frac{1}{4}$  grain; of extract of leaves, 1870,  $\frac{1}{4}$  to 1 grain; of fluid extract of root; 1880,  $\frac{1}{2}$  to 2 minims; of fluid extract of leaves, 1 to 4 minims; of tincture of root; 1870,  $\frac{1}{2}$  to 4 minims; of tincture of root, 1880,  $\frac{1}{2}$  to 5 minims; of tincture of leaves, 5 to 15 minims; of Fleming's Tincture,  $\frac{1}{2}$  to 3 minims.

Aconite Liniment, Oleate and Ointment are used externally.

**Aconitine.** An alkaloid from Aconite. The active medicinal principle. It must be used with great caution. The dose is  $\frac{1}{200}$  of a grain.

**ACTÆA—Baneberry.**—The root of *Actæa alba* (White Cohosh), or of *Actæa rubra* (Red Baneberry or Cohosh).

Cathartic, emetic, emmenagogue; also used externally to destroy parasites.

Dose of powder, 5 to 10 grains, of fluid extract, 5 to 10 minims.

**ADANSONIA DIGITATA—Baobab—Monkey Bread Tree.**—The bark. Tonic antiperiodic. Used in place of Cinchona.

Dose of powder, 30 to 60 grains; of fluid extract, 30 to 60 minims.

**ADEPS—Lard.**—The purified fat of the hog. Used chiefly for making ointments, but is rapidly being superseded by Petrolatum.

Lard Oil is used in liniments, etc., being more readily absorbed than vegetable oils. It is not officinal.

**ADEPS BENZOINATUS—Benzoinated Lard.**—Used for the same purposes as lard, but is less liable to become rancid.

**ADIANTUM—Maiden-hair Fern.**—The plant *Adiantum pedatum*. Aromatic tonic demulcent. In Catarrh and pulmonary diseases.

Dose of powder, 20 to 60 grains; of fluid extract, 20 to 60 minims; of Syrup (1:20), 1 to 5 fl.dr.

**ÆSCULUS GLABRA—Buckeye Bark.**—Tonic, febrifuge. Acts on the liver.

Dose of powder, 5 to 30 grains; of fluid extract, 5 to 30 minims.

**ÆSCULUS HIPPOCASTANUM.**—See Hippocastanum.

**ÆTHER—Ether.**—"A liquid composed of about 74 per cent. of Ethyl Oxide, and about 26 per cent. of Alcohol, containing a little Water." Sp. gr. 0.750 at 15° C. (59° F.).

**ÆTHER FORTIOR—Stronger Ether,** also known as "Sulphuric Ether."—Contains about 94 per cent. Ethyl Oxide, and about 6 per cent. of Alcohol. Sp. gr. 0.725 at 15° C. (59° F.) Used as an anæsthetic, and taken in the form of an emulsion, as a hypnotic, and to relieve pain.

Dose, 30 to 60 minims, mixed with syrup, or mucilage, but better exhibited in Spirit of Ether (Hoffman's Anodyne, without Etherial Oil), of which the dose is from 30 to 120 minims.

**ÆTHER ACETICUS—Acetic Ether.**—Mainly used for preparing artificial fruit flavors.

**ÆTHEREUM OLEUM—Etherial Oil, Heavy Oil of Wine.**—Used only in preparing Compound Spirit of Ether (Hoffman's Anodyne). Although the Etherial Oil is retained in the officinal formula for Hoffman's Anodyne it is usually omitted by druggists.

**ÆTHERIS SPIRITUS COMPOSITUS**—Compound Spirit of Ether.—Hoffman's Anodyne. Stimulant, antispasmodic, anodyne. A popular remedy for cramps and pain.

Dose, 10 to 60 minims.

**ÆTHERIS NITROSI SPIRITUS**—Spirit of Nitrous Ether. Sweet Spirit of Nitre. Diaphoretic, diuretic, antispasmodic.

Dose, 30 to 60 minims.

**AGARICUS ALBUS**—White Agaric (*Boletus Laricis*).—Fungus formed on the Larch. Purgative; also for night sweats, etc.

Dose of powder, as a cathartic, 30 to 60 grains; for night sweats, etc., 2 to 3 grains. Dose of fluid extract the same in minims.

**AGRIMONIA**—Agrimony.—The whole plant *Agrimonia eupatoria*. Astringent, stimulant.

Dose of powder, 30 to 60 grains; of fluid extract, 30 to 60 minims.

**AILANTHUS**—Tree of Heaven.—Chinese Sumach. The root bark of *Ailanthus glandulosa*. Bitter tonic, antispasmodic. In dyspepsia, brain troubles, etc., also for tape worm,

Dose of powder, 10 to 30 grains; of fluid extract, 10 to 30 minims; of green plant fluid extract, 5 to 20 minims.

**AKASGA**—Boundon.—Ikaju, Quai. The bark. Nerve tonic; bitter poison; similar to Nux Vomica.

Dose of powder, 3 to 10 grains; of fluid extract, 3 to 10 minims.

**ALCOHOL**.—A spirit distilled from fermented grain or other substances. (See page 54.)

**Alcohol Dilutum**.—(See page 57).

**Alcohol Amylicum**.—Fusil Oil, Potato Oil.

**Alcohol Methylicum**.—Wood, Alcohol or Naphtha, Alcoholic, Pyroxylic or Pyroligneous Spirit. Sometimes used in cough mixtures and remedies for consumption, etc.

Dose 10 to 30 minims, mixed with syrup or mucilage.

**ALETRIS**—Unicorn.—Star Grass, Colic Root. The rhizome of *Aletris Farinosa*. Bitter uterine tonic, etc. Also used for colic, dyspepsia, etc.

Dose of powder, 5 to 15 grains; of fluid extract, 5 to 15 minims; of green plant fluid extract, 5 to 10 minims.

**ALKANNA**—Alkanet.—The root of *Anchusa tinctoria*. Used chiefly to color preparations red, especially oils and fats.

**ALLIUM**—Garlic.—The bulb of *Allium sativum*. Stimulant, diuretic, carminative.

Dose of bulb, 30 to 60 grains; of fluid extract, 30 to 60 minims; of syrup, 1 to 4 fluidrachms.

**ALUNS RUBRA**—Tag Alder.—American or Black Alder. The bark of *Alnus serrulata*. Astringent, alterative. In scrofula, syphilis and skin diseases.

Dose of powder, 30 to 60 grains; of fluid extract, 30 to 60 minims.

**ALOES**.—The inspissated juice from the leaves of various species of aloe. Socotrine Aloes is the only variety now officinal; the 1870 pharmacopœia recognized three varieties: Socotrine, Barbadoes, and Cape Aloes. Cathartic, emmenagogue.

Dose of powder, as Cathartic, 10 to 15 grains, as tonic laxative, 1 to 3 grains; of fluid extract, 5 to 30 minims; of purified aloes, 1880, 1 to 15 grains; of Aqueous extract,  $\frac{1}{2}$  to 3 grains; of tincture, 1870, 1 to

4 fl.dms.; of tincture, 1880,  $\frac{1}{2}$  to  $1\frac{1}{2}$  fl.dms; of Tincture of Aloes and Myrrh, 1 to 2 fl.dms.; of Wine of Aloes, 2 to 4 fl.dms.; of pills (2 gr.), 1 to 4.

**Aloin**, is a neutral principle prepared from Aloes; the dose is  $\frac{1}{10}$  to  $\frac{1}{2}$  grain.

**ALSTONIA CONSTRICTA**—Australian Fever Tree, or Bitter Bark.—The bark. Antiperiodic, astringent, tonic. Introduced as a substitute for Cinchona.

Dose of powder,  $\frac{1}{2}$  to 3 drachms; of fluid extract,  $\frac{1}{2}$  to 3 fluid drachms.

**ALSTONIA SCHOLARIS**—Dita Bark.—The Bark. Tonic, antiperiodic, anthelmintic. Properties similar to Cinchona.

Dose of powder,  $\frac{1}{2}$  to 3 drachms; of fluid extract,  $\frac{1}{2}$  to 3 fluid-drachms.

**ALTHÆA**—Marshmallow.—The root or flowers of *Althæa officinalis*. Demulcent, diuretic. Coughs, colds, etc.

Dose of decoction (1:10), 1 to 4 fl.ounces; of fluid extract of root or flowers, 1 to 2 fl.drachms; of Syrup, 2 to 4 fl.drachms.

**ALUMINIUM**.—(Al; 27). A very light, white metal. Druggists grain weights are frequently made of Aluminium Wire.

**ALUMEN**—Alum.—The Sulphate of Aluminium and Potassum is the present officinal Alum; the 1870 Alum was the sulphate of Aluminium and Ammonium. Alum is used in medicine as an astringent, also as an emetic, gargle, injection, etc.

Dose, from 5 to 30 grains, in solution.

**ALUMEN EXSICCATUM**—Dried Alum, Burnt Alum.—Alum deprived of its water of crystallization by heat. A powerful Astringent; used mainly for removing fungus growths, "proud flesh," etc.

**ALUMINII HYDRAS**—Hydrate of Aluminium.—Precipitated by Carbonate of Sodium. But little used in medicine.

**ALUMINII SULPHAS**—Sulphate of Aluminium.—Prepared by dissolving Hydrate of Aluminium in diluted Sulphuric Acid, and then evaporating the solution. Used externally as an astringent and disinfectant.

**AMBROSIA**—Richweed, Ragweed.—The whole plant *Ambrosia trifida*. Cures mercurial salivation. Stimulant, astringent, antiseptic.

Dose of powder, 1 to 4 drachms; of fluid extract, 1 to 4 fl.drachms.

**AMMONIACUM**—Ammoniac.—The gum-resin, from *Dorema Ammoniacum*. Antispasmodic, expectorant, stimulant. In coughs, catarrh, asthma, etc.

Dose of powder, 10 to 30 grains; of mixture,  $\frac{1}{2}$  to 1 fl.ounce.

Ammoniac Plaster and Ammoniac Plaster with Mercury are officinal, and are mainly used in scrofulous or syphilitic swellings.

**AMMONIUM**—(H<sub>4</sub>N).—A gaseous compound radical, readily known by its odor.

**AMMONIÆ AQUA**—Water of Ammonia. (See page 60.) Sp. gr. 0.956, at 15°C. (59°F.).

**AMMONIÆ AQUA FORTIOR**—Stronger Water of Ammonia.—Sp. gr. 0.900 at 15°C. (59°F.).

**AMMONIÆ LINIMENTUM**—Liniment of Ammonia.—A stimulating counter-irritant. Used for lameness, swellings, pain, etc.



**AMMONIÆ SPIRITUS**—Spirit of Ammonia.—Stimulant, antispasmodic. In hysteria, flatulent colic and nervous debility.

Dose 10 to 30 minims, largely diluted.

**AMMONIÆ SPIRITUS AROMATICUS**.—Properties same as above, but more diluted. In sick headache, fainting, etc.

Dose from 30 to 60 minims.

**AMMONII ACETATIS LIQUOR**—Solution of Acetate of Ammonium. Spiritus Mindereri. A neutral solution, made by saturating diluted Acetic Acid with Carbonate of Ammonium. Diaphoretic, antiphlogistic, etc. Used in fevers, etc.

Dose 4 to 8 fl.drachms.

**AMMONII BENZOAS**—Benzoate of Ammonium.—Made by neutralizing Benzoic Acid with Water of Ammonia and crystallizing. Antiseptic, stimulant, etc. Used in bladder and kidney diseases.

Dose, 5 to 20 grains.

**AMMONII BROMIDUM**—Bromide of Ammonium.—A granular salt, made by neutralizing a solution of Bromine with Water of Ammonia, and evaporating the solution. Properties similar to Bromide of Potassium, but is less depressing.

Dose, 5 to 30 grains, or more.

**AMMONII CARBONAS**—Carbonate of Ammonium, Harts-horn, Sal Volatile.—Made by heating Chloride of Ammonium and Chalk together in large iron retorts, and subliming the vapor in large earthen or leaden receivers. Stimulant in fevers, and typhoid conditions.

Dose, 1 to 6 grains; best given in mucilage or syrup.

**AMMONII CHLORIDUM**—Chloride of Ammonium, Muriate of Ammonia, Sal Ammoniac.—Made from gas liquor or bone spirit—the ammonical products of destructive distillation of coal or bones. It may also be made by neutralizing Hydrochloric Acid with Ammonia and evaporating the solution. Expectorant, diaphoretic, diuretic, alterative, etc.; also used externally.

Dose, from 5 to 60 grains.

**AMMONII IODIDUM**—Iodide of Ammonium.—Made by the double decomposition of Iodide of Potassium and Sulphate of Ammonium. Also by neutralizing a solution of Iodine with Ammonia, and evaporating. Alterative, resolvent; also used externally.

Dose, 1 to 10 grains, in solution or syrup.

**AMMONII NITRAS**—Nitrate of Ammonium.—Mainly used for preparing Nitrous Oxide ("Laughing Gas"), for dentists, etc.

**AMMONII PHOSPHIS**—Phosphate of Ammonium.—In gout, rheumatism and diabetes. Used to produce an alkaline condition of the blood.

Dose, 10 to 20 grains.

**AMMONII SULPHAS**—Sulphate of Ammonium.—Is used only in making Ammonia-Alum, and Sulphate of Iron and Ammonium.

**AMMONII VALERIANAS**—Valerianate of Ammonium.—Valerianic Acid neutralized with Ammonia Gas and crystallized. Nervine. In headache, insomnia, nervous irritation, etc.

Dose, from 2 to 8 grains, best given in the form of an elixir.

**AMPELOPSIS**—American Ivy, Virginia Creeper.—The young branches and bark of *Ampelopsis quinquefolia*. Alterative, astringent, expectorant, tonic. In scrofula, syphilis, dropsy, pulmonary affections, etc.

Dose of powder, 30 to 60 grains; of fluid extract, 30 to 60 minims.



**AMYGDALA AMARA**—Bitter Almond.—The seeds or kernel. Used only for flavoring.

The Oil of Bitter Almond has properties similar to Hydrocyanic Acid, but is seldom given. Bitter Almond Water is sometimes given as a sedative, but is mainly used as a flavoring ingredient in preparations.

Dose, 1 to 3 fl.drachms.

**AMYGDALA DULCIS**—Sweet Almond.—The seeds or kernel. Mainly used for making emulsive mixtures and syrups. Bland, demulcent.

Dose of Almond mixture, 1 to 4 ounces; of Almond Syrup,  $\frac{1}{2}$  to 2 ounces. They are chiefly used for flavoring. Almond Oil expressed from the seeds is used as a demulcent; usually given in the form of an emulsion.

**AMYGDALUS PERSICA**—Common Peach.—The leaves or bark. Sedative, laxative. In irritability of the bladder or digestive tract; also in whooping cough.

Dose of powdered leaves or bark, 5 to 20 grains; of fluid extract, 5 to 20 minims; of green plant fluid extract, 2 to 10 minims.

**AMYL NITRIS**—Nitrite of Amyl.—Obtained by the action of fuming Nitric Acid on fusel oil.

Sedative in asthma, whooping cough, angina pectoris, etc.; administered mainly by inhalation, but may be given in doses of 2 to 5 minims in Spirit of Nitre.

**AMYLUM**—Starch.—Prepared from grain, or other substances containing it. Used for making Glycerite of Starch, Iodide of Starch, etc.

Iodide of Starch is used as an alterative absorbent, and presents the best form for introducing iodine without irritation into the system.

Dose is from  $\frac{1}{2}$  to 2 drachms.

**ANAGALLIS ARVENSIS**—Scarlet Pimpernel.—The herb. Used in consumption, dropsy, epilepsy, etc.

Dose of powder, 15 to 30 grains; of fluid extract, 15 to 30 minims.

**ANDIRA INERMIS**—Yellow Cabbage Tree.—The bark. Vermifuge.

Dose of powder, 10 to 30 grains; of fluid extract, 10 to 30 minims.

**ANEMONE NEMOROSA**—Windflower.—The herb. Alterative, in skin diseases, amaurosis, etc.

Dose of powder, 5 to 15 grains; of fluid extract, 5 to 15 minims.

**ANEMOPSIS**—Yerba Mansa.—The root of *Anemopsis Californica*. Aromatic, tonic, astringent, stimulant. In malarial fever, rheumatism, diarrhoea, etc.

Dose of powder, 15 to 60 grains; of fluid extract, 15 to 60 minims.

**ANETHUM**—Dill.—The fruit (seeds) of *Anethum graveolens*. Aromatic, stimulant, carminative. In colic, indigestion, etc.

Dose of powder, 1 to 4 drachms; of fluid extract, 1 to 4 fl.drachms.

**ANGELICA**.—The root or seed of *Angelica atropurpurea*. Aromatic, stimulant, carminative, diuretic. In bronchitis, colic, urinary diseases, etc.

Dose of powdered root or seed, 20 to 60 grains; of fluid extract, 20 to 60 minims.

**AUGUSTURA**.—The bark of *Galipea Cusparia*. Stimulant, bitter tonic. In bilious fevers, debility, diarrhoea, etc.

Dose of powder, 10 to 30 grains; of fluid extract, 10 to 30 minims; of infusion, 1870 (1:32), 1 to 2 fl.ounces.

**ANILINA**—Aniline, Aniline Oil.—A fluid, oily alkaloid; obtained from coal tar. It unites with acids, forming the aniline colors now so much used.

**ANISUM**—Anise.—The fruit (seed) of *Pimpinella Anisum*. (See also Illicium). Aromatic, stimulant, carminative. In colic of infants, etc.

Dose of powder, 15 to 30 grains; of fluid extract, 15 to 30 minims; of infusion (1:10), 2 to 4 fl drachms; of oil, 3 to 15 minims; of spirit or essence, 5 to 30 minims; of water,  $\frac{1}{2}$  to 1 fl.ounce.

**ANTHEMIS**—Chamomile, English or Roman Chamomile.—The flower heads of *Anthemis nobilis*. Stimulant, tonic, carminative, in large doses diaphoretic.

Dose of powder, 30 to 60 grains; of extract, 2 to 10 grains; of fluid extract, 15 to 60 minims; of infusion, 1870 (1:20), 1 to 2 fl.ounces.

**ANTIMONIUM**—Antimony.—(Sb; 120). A heavy white metal resembling tin.

**ANTIMONII CHLORIDI LIQUOR**.—"Butter of Antimony," known in commerce as Terechloride of Antimony. Used externally as an escharotic, and by physicians to prevent poisoning from cuts in post-mortem operations.

**ANTIMONII ET POTASSII TARTRAS**—Tartrate of Antimony and Potassium, Tartar Emetic.—A soluble tartrate of Antimony. Expectorant, diaphoretic, emetic.

Dose, as expectorant, etc.,  $\frac{1}{12}$  to  $\frac{1}{4}$  grain; as an emetic,  $\frac{1}{2}$  to 2 grains. Dose of Wine of Antimony, 10 to 60 minims.

Tartrate of Antimony and Potassium is frequently rubbed on plasters to produce pustular exudation.

**ANTIMONII OXIDUM**—Oxide of Antimony.—Used mainly for preparing antimonial powder (James' Powder).

Antimonial Powder is used as diaphoretic, alterative or emetic.

Dose as a diaphoretic,  $\frac{1}{2}$  to 2 grains; as an emetic, 5 to 15 grains.

**ANTIMONII OXYSULPHURETUM**—Kermes Mineral.—Used in cough mixtures, etc.

Dose,  $\frac{1}{6}$  to 1 grain.

**ANTIMONII SULPHIDUM**—Sulphide of Antimony, Black Sulphuret of Antimony.—Used mainly for preparing other preparations of Antimony.

Dose, 4 to 15 grains.

**ANTIMONII SULPHIDUM PURIFICATUM**—Purified Sulphide of Antimony.—Sulphide of Antimony treated with Water of Ammonia.

**ANTIMONII SULPHIDUM FLAVUM**—Yellow Sulphide of Antimony.—An orange-colored powder having the same properties as other salts of Antimony.

Dose,  $\frac{1}{6}$  to 1 grain.

**ANTIMONII SULPHURATUM**—Sulphurated Antimony, Golden Sulphuret of Antimony.—Expectorant, diaphoretic. In coughs, catarrh, etc.

Dose,  $\frac{1}{6}$  to 1 grain.

**APIUM**—Celery.—The fruit (seed) of *Apium graveolens*. Aromatic, carminative diuretic, nervine stimulant. Especially useful in genito-urinary irritation.

Dose of powder, 15 to 30 grains; of fluid extract, 15 to 30 minims.

**APOCYNUM**—Black Indian Hemp.—The root of *Apocynum cannabinum*. Hydragogue cathartic, diaphoretic, emetic. In dropsy, etc.  
Dose of powder, 5 to 20 grains; of extract, 1 to 10 grains; of fluid extract, 5 to 20 minims.

**APOCYNUM ANDROSÆMIFOLIUM**—Bitter Root.—Dog's Bane. The root. Alterative, tonic, laxative, emetic. Similar to *Apocynum cannabinum*.

Dose of powder, 10 to 60 grains; of extract, 2 to 10 grains; of fluid extract, 10 to 60 minims.

**AQUÆ**—Medicated Waters.—Mainly Aromatic Waters. Used as vehicles for combining with other medicinal preparations. (See page 59.)

**ARALIA HISPIDA**—Dwarf Elder.—The rhizome. Alterative, diuretic. In dropsy, gravel, etc.

Dose of powder, 30 to 60 grains; of fluid extract, 30 to 60 minims.

**ARALIA NUDICAULIS**—American Sarsaparilla.—The rhizome. Alterative.

Dose of powder, 30 to 80 grains; of fluid extract, 30 to 80 minims; of compound fluid extract, 20 to 60 minims.

**ARALIA RACEMOSA**—Spikenard.—The rhizome. Alterative. In pulmonary diseases.

Dose of powder, 30 to 80 grains; of fluid extract, 30 to 80 minims; of compound fluid extract, 20 to 60 minims.

**ARALIA SPINOSA**—Southern Prickly Ash, Angelica Tree, Hercules Club, etc. The bark or berries. Sialagogue, alterative, tonic, etc.

Dose of powdered bark, 5 to 30 grains; of fluid extract, 5 to 30 minims.

**ARAROA**—Goa-powder.—A grayish-brown powder, from decayed wood of unknown Brazilian trees—the source of Chrysarobin.

**ARECA**—Betel-Nut.—The seed or nut of *Areca Catechu*. Astringent, aromatic, anthelmintic.

Dose of power,  $\frac{1}{2}$  to 4 drachms; of fluid extract, as astringent, 20 to 60 grains; as a tænicide, 2 to 6 fl.drachms.

**ARGENTUM**—Silver.—(Ag; 107.7). A heavy, white metal. (See page 68.)

Cyanide of Silver is sometimes used for making Hydrocyanic Acid.

Iodide of Silver is used for the same purpose as Nitrate of Silver.

Dose, 1 to 2 grains.

**ARGENTI NITRAS**—Nitrate of Silver.—Used in the arts, and externally as a caustic. Given in acute gastritis, pyrosis, chronic diarrhoea, etc.

Dose,  $\frac{1}{4}$  grain.

**ARGENTI NITRAS DILUTUS**—Diluted Nitrate of Silver.—Contains 50 per cent. each Nitrate of Potassium, and Nitrate of Silver, fused together.

Used externally the same as Nitrate of Silver, but is milder.

**ARGENTI NITRAS FUSUS**—Fused Nitrate of Silver.—Nitrate of Silver in convenient form for external use.

**ARGENTI OXIDUM**—Oxide of Silver.—Used internally in gastric catarrh, etc.

Dose,  $\frac{1}{2}$  to 2 grains.

**ARMORACIA**—**Horseradish**.—The root or leaves of *Cochlearia Armoracia*. Stimulant, stomachic, diuretic, anti-scorbutic. In dyspepsia, scurvy, etc. Preparations should be made from the green root or leaves, as when dry they are of little value.

Dose of grated root, 1 to 4 drachms; of fluid extract, 1 to 2 fl. drachms; of distilled extract, 1 to 3 fl. drachms; of aromatic spirit, 1 to 3 fl. drachms.

**ARNICA**.—The flowers or root of *Arnica montana*, chiefly used externally, but sometimes given for fevers, paralysis, etc.

Dose of powder, 10 to 20 grains; of fluid extract of root or flowers, 10 to 20 minims; of tincture of root or flowers, 15 to 45 minims.

The official extract which was made from the flowers in 1870, but is now made from the root, is used for making arnica plaster.

**ARNOTTA**—**Annatto**.—Orleana. The coloring matter from the seeds of *Bixa orellana*; used as a coloring matter for butter, cheese, etc.

**AROMATICUS PULVIS**—**Aromatic Powder**.—Aromatic, carminative, stimulant. Used mainly as an addition to other powders.

Dose of powder, 5 to 30 grains; of fluid extract, 5 to 30 minims.

*Aromatic confection* was officinal in the 1870 Pharmacopœia, and was used chiefly as an excipient for pills.

**ARSENIUM**—**Arsenic**.—A poisonous metal (Cobaltum). As; 75.

**Arseniosum Acidum**.—Arsenious Acid. White Arsenic, made from arsenic by sublimation. Alterative.

Dose,  $\frac{1}{30}$  to  $\frac{1}{12}$  grain.

Its antidote is Hydrated Oxide of Iron, or Hydrated Oxide of Iron with Magnesia.

**Arseniosi Acidi Liquor**.—Solution of Chloride of Arsenic, or Arsenious Acid. Arsenious Acid dissolved in a dilute Hydrochloric Acid. It contains 1 per cent. of Arsenious Acid.

**Arsenii Iodidum**.—Iodide of Arsenic. Alterative. Dose,  $\frac{1}{20}$  grain. Also used externally in the form of ointment and solution.

The properties of solutions of arsenic are similar, and the doses are as follows:

Solution of Arseniate of Sodium, 3 to 6 minims; solution of Iodide of Arsenic and Mercury (Donovan's solution), 3 to 5 minims; solution of Arsenite of Potassium (Fowler's solution), 3 to 6 minims.

**ARTEMISIA ABROTANUM**.—**Southernwood** (*Old man*).—The flowering tops. Bitter tonic, anthelmintic, nervine.

Dose of powder, 15 to 40 grains; of fluid extract, 15 to 40 minims.

**ARTEMISIA FRIGIDA**—(*Sierra Salva*) **Mountain Sage**.—The plant. Antiperiodic. Used in Malaria, etc.

Dose of powder, 1 to 2 drachms; of fluid extract, 1 to 2 fl. drachms.

**ARTEMISIA VULGARIS**—**Mugwort**.—The root. Tonic, nervine, anthelmintic. In epilepsy, hysteria, etc.

Dose of powder, 15 to 45 grains; of fluid extract, 15 to 45 minims.

**ARUM**—**Indian or Wild Turnip**.—The tuber of *Arum triphyllum* (American), or *Arum maculatum* (European). Acid, stimulant, expectorant, diaphoretic. Used for coughs, croup, etc.

Dose of powder, 10 to 30 grains; of fluid extract, 10 to 30 minims; of green plant, fluid extract, 5 to 20 minims.

The green plant fluid extract is the best preparation of the drug.

**ASAFÆTIDA**—**Asafetida**.—The concrete or dried juice of *Ferula*

*Narthex.* Nervine, antispasmodic. In convulsions, hysteria and nervous conditions.

Dose of powder (in pills), 3 to 15 grains; or fluid extract, 5 to 25 minims; of mixture, 3 to 8 fl.drachms; of tincture, 20 to 60 minims.

Asafetida plaster and pills are also official. An unofficial syrup of asafetida is a good preparation for worms.

**ASARUM**—Canada Snakeroot.—Wild Ginger. The root of *Asarum Canadense*. Aromatic, stimulant, carminative, stomachic. In dyspepsia, colic, etc. The oil is used in perfumes.

Dose of powder, 1 to 2 drachms; of fluid extract, 1 to 2 fl.drachms.

**ASCLEPIAS**—Pleurisy Root, White Root, Butterfly Weed.—The root of *Asclepias tuberosa*. Diaphoretic, expectorant. Used for pleurisy, pneumonia, fevers, etc.

Dose of powder, 30 to 120 grains; of fluid extract, 30 to 120 minims; of green plant fluid extract, 5 to 20 minims.

**ASCLEPIAS CORNUTI**.—Milkweed, Silkweed, Wild Cotton.—The rhizome. Uses similar to Pleurisy Root.

Dose of powder, 10 to 40 grains; of fluid extract, 10 to 40 minims.

**ASCLEPIAS CURASSAVICA**—Blood Flower, Bastard Ipecac.—The plant. Astringent, used in hemorrhage and diseased mucous discharges; also as a vermifuge.

Dose of powder, 15 to 60 grains; of fluid extract, 15 to 60 minims.

**ASCLEPIAS INCARNATA**—White Indian Hemp, Swamp Milkweed.—The rhizome and rootlets. Alterative, diaphoretic, diuretic, anthelmintic. In rheumatism, asthma, etc.

Dose of powder, 10 to 40 grains; of fluid extract, 10 to 40 minims.

**ASIMINA TRILOBA**—(Uvaria Triloba) American Papaw.—The seed or bark. Emetic.

Dose of powder, 10 to 30 grains; of fluid extract, 10 to 30 minims.

**ASPARAGUS**.—The young shoots or roots of *Asparagus officinalis*. Diuretic, alterative. In dropsy, etc.

Dose of powder, 1 to 3 drachms; of fluid extract, 1 to 3 fl.drachms.

A fluid extract prepared from the green shoots is most esteemed.

**ASPIDIUM**—Male Fern, Filix-Mas.—The rhizome of *Aspidium filix-mas*. Mainly used for tape worm.

Dose of powder, 1 to 3 drachms; of fluid extract, 1 to 3 fl.drachms; of oleoresin, 60 to 90 grains.

**ASPIDOSPERMA**—Quebracho.—The bark of *Aspidosperma Quebracho*. Used in asthma, bronchitis, phthisis, etc., and as an anti-periodic and stomachic.

Dose of powder, 20 to 60 grains; of fluid extract, 20 to 60 minims.

**ASTER PUNICEUS**—Red Stalked Aster, Cocash.—The root. Stimulant, diaphoretic. In rheumatism, headache, nervous debility, etc.

Dose of powder, 30 to 60 grains; of fluid extract, 30 to 60 minims.

**ATROPINA**—Atropine (1880), Atropia (1870).—An alkaloid prepared from Belladonna.

Dose,  $\frac{1}{120}$  to  $\frac{1}{60}$  grain.

Oleate and Ointment of Atropine, made from this alkaloid, are frequently used.

**Atropinæ Sulphas**.—Sulphate of Atropine (1880), Atropia (1870). A salt prepared from the alkaloid Atropine. Dose, same as above.

Liquor Atropinæ Sulphatis is official in the Br. Ph. It is made by



dissolving 1 part of the salt in 100 parts of distilled water. It is used mainly for hypodermic injection, or application in diseases of the eye.

**AURANTII AMARI CORTEX**—Bitter Orange Peel.—The rind of fruit of *Citrus vulgaris*. Aromatic, stimulant, stomachic.

Dose of powder, 30 to 60 grains; of fluid extract, 30 to 60 minims; of infusion (1:16),  $\frac{1}{2}$  to 2 fl.ounces; of tincture, 1870,  $\frac{1}{2}$  to 3 fl.drachms; of tincture, 1880, 1 to 2 fl.drachms.

**AURANTII DULCIS CORTEX**—Sweet Orange Peel.—The rind of the fruit of *Citrus Aurantium*. Aromatic, stimulant, carminative. Used mainly as a flavoring for other medicines.

Dose of confection, 1870, *ad. lib.*; of elixir, 1880, 1 to 3 fl.ounces; of spirit or essence, 30 to 60 minims; of fluid extract, 1 to 3 fl.drachms; of syrup,  $\frac{1}{2}$  to 2 fl.ounces; of tincture, 1 to 2 fl.drachms.

The oil is used mainly for flavoring.

**AURANTII FLORES**—Orange Flowers.—The flowers of bitter or sweet orange.

Orange Flower Water (which is prepared from the flowers) is used for flavoring medicinal compounds, and for making Syrup of Orange Flowers.

The Oil of Orange Flowers.—*Oleum Neroli* is an ingredient of many good colognes, perfumes, etc.

**AURI ET SODII CHLORIDUM**—Chloride of Gold and Sodium.—A mixture of equal parts of Chloride of Gold and Chloride of Sodium (salt). Used in neurosis, melancholia and hypochondria; also in seminal weakness, Bright's disease, etc.

Dose,  $\frac{1}{30}$  to  $\frac{1}{16}$  grain.

**AVENA SATIVA**—Common Oats.—The seed. A fluid extract or concentrated tincture of *Avena Sativa*, has recently come into notice as a remedy for dipsomania, the opium habit, nervous prostration, paralysis, etc.

Dose of fluid extract, 10 to 30 minims.

**AZEDARACH**—Pride of China or Japan.—The root bark of *Melia Azedarach*. Vermifuge, resembling spigelia.

Dose of powder, 10 to 30 grains; of fluid extract, 10 to 30 minims.

**BACCHARIS PILULARIS**—Kidney Root.—Balsamic, tonic, stimulant. Used for kidney and bladder diseases.

Dose of powder, 20 to 60 grains; of fluid extract, 20 to 60 minims.

**BAPTISIA**—Wild Indigo.—The root of *Baptisia tinctoria*. Antiseptic, stimulant, purgative, emetic. In fevers, dysentery, etc., and externally in poultices.

Dose of powder, 5 to 20 grains; of fluid extract, 5 to 20 minims; of green plant fluid extract, 5 to 20 minims.

Baptisin is prepared by precipitating the alcoholic tincture with water.

**BARIIUM**.—(Ba; 136.8). From the Alkaline Earth Baryta, which is an Oxide. *Carbonate* and *Chloride of Barium* were formerly officinal, and the Chloride of Barium test solution is still used in the new pharmacopœia.

*Carbonate of Barium* or *Barytes* is used largely in the manufacture of cheap paint; it is insoluble in water.

*Chloride of Barium* is in colorless crystals, soluble in water and is chiefly used as a test re-agent for sulphates.

*Nitrate of Barium* is little used, except in pyrotechnics.

**BEBERINÆ SULPHAS**—Sulphate of Beberine.—A salt prepared from Bebeeru, or Nectandra bark. Is officinal in the Br. Ph. Bitter tonic, antiperiodic. Used instead of quinine.

Dose as a tonic, 1 to 3 grains; as an antiperiodic, 5 to 10 grains.

**BELÆ FRUCTUS**—Bael Fruit, Bengal Quince.—The unripe fruit of *Ægle Marmelos*. Astringent, aromatic, demulcent. In diarrhœa, dysentery, etc.

Dose of infusion (1:4), 2 to 6 fl.drachms; of fluid extract, 30 to 60 minims.

**BELLADONNA**.—The root or leaves of *Atropa Belladonna*. Narcotic poison, increasing the action of the heart, stimulating the respiratory organs, and acting as a sedative and laxative on the peripheral nerves.

Dose of powdered leaves, 1 to 10 grains; of powdered root, 1 to 5 grains; of extract of root,  $\frac{1}{8}$  to  $\frac{1}{4}$  grain; of extract, 1870, from fresh leaves,  $\frac{1}{4}$  to  $\frac{1}{2}$  grain; of extract, 1880, from dried leaves,  $\frac{1}{6}$  to  $\frac{1}{2}$  grain; of abstract of root,  $\frac{1}{2}$  to 2 grains; of fluid extract of leaves, 2 to 5 minims; of fluid extract of root, 1 to 3 minims; of tincture of leaves, 5 to 20 minims; of tincture of root, 5 to 15 minims.

Belladonna plaster, liniment, and ointment which are officinal, are used externally, and suppositories containing extract of Belladonna are frequently prescribed.

**BENZINUM**—Benzin, Petroleum Ether, Gasoline.—The lightest product of petroleum distillation, sp. gr., 0.675. A powerful solvent for oils, resins and some gums. Used to remove grease from clothes, etc.

**BENZOINUM**—Benzoin.—A balsamic resin, derived from *Styrax Benzoïn*. Used chiefly as an aromatic, in Tincture of Benzoin, and Benzoin Compound, and in making Benzoinated Ointments, also for making Benzoic Acid. The tincture is seldom taken, but used for cosmetic washes, and in colognes.

The dose is from 30 to 60 minims.

The compound tincture which was known as Friar's Balsam was once a popular remedy for everything.

Dose, 30 to 60 minims.

**BENZOL**.—A petroleum ether, more frequently called Benzine. It is heavier than the officinal Benzine, having a sp. gr. of from 0.85 to 0.90, and also having a strong odor. It is used as a solvent, the same as Benzin.

**BERBERINA**—Berberine.—An alkaloid, derived from a variety of plants. Bitter tonic, stomachic, cholagogue. In atonic dyspepsia, malaria, etc.

Dose, 2 to 5 grains.

**BERBERIS AQUIFOLIUM**—Oregon Grape.—The root. Bitter tonic, stomachic, alterative. In dyspepsia, skin diseases, cancer, etc.

Dose of powder, 10 to 30 grains; of fluid extract, 10 to 30 minims.

**BERBERIS VULGARIS**—Common Bayberry.—The bark. Bitter tonic, stomachic, etc. In dyspepsia, chronic diarrhœa, etc.

Dose of powder, 30 to 120 grains; of fluid extract,  $\frac{1}{2}$  to 2 fluid-drachms.

**BERGAMII OLEUM**—Oil of Bergamot.—The volatile oil from the fruit rind of *Citrus Bergamia*. Used in perfume, soaps, oils, etc.

**BETONICA**—Betony.—The herb *Betonica officinalis*. Sedative, nervine. In epilepsy, headache, and nervous disorders.

Dose of powder, 15 to 60 grains; of fluid extract, 15 to 60 minims.



**BETULA LENTA**—Black or Cherry Birch.—The bark. Astringent, stimulant, diaphoretic. In cholera infantum, dysentery, etc.

Dose of powder, 30 to 90 grains; of fluid extract, 30 to 90 minims.

**BIDENS BIPINNATA**—Spanish Needles.—The root. Emmenagogue, expectorant, diuretic.

Dose of powder, 20 to 60 grains; of fluid extract, 20 to 60 minims.

**BISMUTHUM**—Bismuth.—(Bi.; 210). A grayish, white metal, chiefly known in medicine by its salts.

**BISMUTHI CITRAS**—Citrate of Bismuth. (See page 69.) This salt is seldom used except to prepare the Citrate of Bismuth and Ammonium.

Dose, 1 to 3 grains.

**BISMUTH ET AMMONII CITRAS**—Soluble Citrate of Bismuth. (See page 69.) In gastric irritability, acid stomach, etc.

Dose, 3 to 5 grains.

**Liquor Bismuth** is made from this salt, by dissolving 256 grains in a pint of warm water and gradually adding Water of Ammonia until the liquid is neutral and clear.

**BISMUTHI OXIDUM**—Oxide of Bismuth.—Is officinal in the Br. Ph. Its uses are similar to the subnitrate, and dose the same.

**BISMUTHI SUBCARBONAS**—Subcarbonate of Bismuth.—Uses the same as Subnitrate of Bismuth.

Dose, 15 to 60 grains in powder, or suspended in syrup or mucilage.

**BISMUTHI SUBNITRAS**—Subnitrate of Bismuth.—This is the most frequently used of all the Bismuth Salts. It is insoluble, and acts merely in a mechanical manner to protect the surfaces. It is used internally for gastric or intestinal irritation, and externally for excoriated or chafed surfaces, and in skin diseases.

Dose, 15 to 60 grains, or more, in powder, or suspended in syrup or mucilage.

**BISMUTHI TANNAS**—Tannate of Bismuth.—Uses and dose the same as Subnitrate of Bismuth.

**BISMUTHI VALERIANAS**—Valerianate of Bismuth.—In addition to the same properties as Subnitrate of Bismuth, it is a nervine when decomposed in the stomach.

Dose, 2 to 5 grains.

**BISTORTA**—Bistort, Snakeweed.—The rhizome of *Polygonum Bistorta*. Astringent. Used in diarrhœa, leucorrhœa, hemorrhages, etc.

Dose of powder, 15 to 30 grains; of fluid extract, 15 to 30 minims.

**BOLDUS**—Boldo.—The leaves of *Pemus Boldus*. Alterative, tonic, stimulant. Used in dyspepsia, diseases of the liver, blood, etc.

Dose of powder, 2 to 10 grains; of fluid extract, 2 to 10 minims.

**BOLUS ALBA**—White Bole.—Terra Alba. A soft, white, aluminous earth, absorbent and astringent. Sometimes used to coat pills; also to remove grease spots from wood.

**Bolus Armena**.—Armenian, or Red Bole, is similar in composition to White Bole, except that it contains Oxide of Iron. It is used frequently for polishing, and sometimes in injections.

**BORAGO OFFICINALIS**—Borage.—The herb. Demulcent, diaphoretic, cooling. In catarrh, skin diseases, rheumatism, etc.

Dose of powder, 2 to 4 drachms; of fluid extract, 2 to 4 fl.drachms.

**BRAYERA—Kousso.**—The flowers of *Brayera anthelmintica*. Used for removing tapeworm.

Dose of powder, 2 to 4 drachms, mixed with mucilage, or made into an infusion and drank, dregs and all; of fluid extract, 2 to 4 fl.drachms; of infusion (1880), a pint, containing  $\frac{1}{2}$  ounce of the drug.

**BROMIUM—Bromine.**—(Br.; 79.8). A liquid, non-metallic element, obtained from salt water. Caustic, disinfectant. Used externally, largely diluted, for gangrene, cancer, ulcers, etc.

**BRYONIA—Bryony.**—The root of *Bryonia Alba*. Hydragogue cathartic. In dropsy, constipation, epilepsy, bronchitis, etc.

Dose of powder, 10 to 60 grains; of fluid extract, 10 to 60 minims; of green plant fluid extract, 5 to 30 minims; of tincture, 1 to 3 fl.drachms.

**BUCHU.**—The leaves of various species of *Barosma*. The "short Buchu," which is most commonly used, is obtained from *Barosma betulina*; the "long Buchu" from *Barosma crenulata*. Aromatic, stimulant, diuretic. Used chiefly in diseases of the urinary organs.

Dose of powder, 20 to 40 grains; of fluid extract, 20 to 40 minims; of infusion (1 oz. to pint), 1 to 4 fl.ounces; of tincture (1:4), 1 to 2 fl.drachms; of distilled extract, 2 to 4 fl.drachms.

**Cactus.**—(See *Cereus*).

**CADMIUM.**—A white elementary metal. Its *iodide* is sometimes used in photography, and also for making ointment for skin diseases. The *sulphate* is an astringent similar to but stronger than sulphate of zinc. It is used externally and for injections, the same as sulphate of zinc.

**CAFFEA—Coffee.**—The seeds of *Coffea Arabica*. Stimulant, diuretic. Used as an antidote to opium or alcohol. The roasted coffee, *Coffea Tosta*, is also used for flavoring syrups, soda water, etc.

Dose of fluid extract,  $\frac{1}{2}$  to 2 fluidrachms; of infusion (1:10), 2 to 8 fluidounces.

**CAFFEINA—Caffeine.**—An alkaloid prepared from green coffee, tea, or guarana. Properties the same as coffee. Used in sick headache, etc.

Dose, 1 to 3 grains.

**CAFFEINÆ CITRAS—Citrate of Caffeine.**—Prepared from Caffeine. Used in cardiac dropsy and as a general diuretic; also as a stimulant in sick or nervous headache.

Dose, 1 to 4 grains.

**CAJUPUTI OLEUM—Oil of Cajuput.**—A stimulant carminative. Used in magic balms, life drops, etc.; also in liniments.

Dose, 2 to 10 drops on sugar.

*Spiritus Cajuputi* is officinal in the Br. Ph. It is made 1 part of the Oil to 49 parts of Rectified Spirit.

Dose, from 30 to 60 minims.

**CALAMUS—Sweet Flag.**—The rhizome of *Acorus Calamus*. Aromatic, stimulant, stomachic.

Dose of powder, 10 to 30 grains; of fluid extract, 10 to 30 minims.

**CALCIUM** (Ca.; 40).—An alkaline element, known chiefly by its salts, which are often improperly called lime instead of calcium.—Lime being itself a Salt of Calcium.

**Calcium Bromide.**—Properties similar to other bromides. Used in nervous diseases, epilepsy, etc.

Dose 15 to 30 grains. As it dissolves readily in an equal weight of water it may be given in solution or syrup.

**Calcium Carbonate, Precipitated.**—Called also *Precipitated Chalk*, *Precipitated Carbonate of Lime*. It has the same composition and properties as *Prepared Chalk*, which is in cones, but is preferred by many practitioners, on account of its greater purity. It is used in making tooth powders, and as medicine in diarrhoea, acid stomach, etc., especially of children. (See *Mistara Cretæ*.)

Dose, 5 to 60 grains.

**Calcium Chloride.**—Used medicinally in skin diseases, scrofulous swellings, etc.

Dose, 5 to 15 grains in an ounce of mucilage.

It is mainly used for making other Calcium Salts.

**Calcium Hypophosphite.**—Called also *Hypophosphite of Lime*. A nutritive and nerve stimulant. Used in debilitated conditions, wasting diseases, etc.

Dose, 3 to 10 grains, in solution; of syrup, 1 to 2 fluidrachms.

**Calcium Iodide.**—Alterative, antiseptic, resolvent. In scrofula.

Dose, 1 to 5 grains, in solution; of syrup (3 grs. to fl.dr.), 1 to 2 fluidrachms.

**Calcium Lactophosphate Syrup.**—(*Syrup of Lactophosphate of Lime*) A nutritive, supplying phosphate of lime to the system. Given to children teething, to nurses, and in caries, rickets and tuberculosis, and wasting diseases.

Dose, 1 to 4 fl.drachms, containing 3 to 6 grains of Lactophosphate of Calcium.

**Calcium Phosphate, Precipitated.**—(*Precipitated Phosphate of Lime*.) Is given to assist in the formation of the osseous structure, also in wasting diseases, combined usually with nutritives.

Dose, from 5 to 30 grains; of syrup, 1 to 2 fluidrachms.

Phosphate of Lime is also used in filtering medicated waters, elixirs, etc.

**Calcium Sulphate Calcined.**—*Gypsum, Plaster of Paris*. Employed in fractures for making forms to keep the limb in position.

Chiefly used by druggists for the higher pharmaceutical calling of "mending lamps."

**Calcium Sulphite.**—*Sulphite of Lime*. This preparation has had considerable sale and reputation as a cider preservative, but since the general introduction of Salicylic Acid is but little used.

**Calcis Liniment.**—*Lime Liniment*, called also *Carron Oil*. Used for burns, scalds, etc.

**Calcis Liquor.**—*Solution of Lime, Lime Water*. Used as an antacid in diarrhoea, acid stomach, etc., also in vomiting of pregnancy, lactation, etc.

Dose from a fluidrachm to 4 fluidounces.

**Calcis Syrup.**—*Syrup of Lime*. Used for the same purposes as Lime Water, Phosphate of Lime, etc.

Dose,  $\frac{1}{2}$  to 2 fluidrachms.

**Calcium Carbonate.**—The precipitated is generally used in medicine.

**CALX—Lime.**—*Quick Lime, Calcium Oxide*. Made by calcining or "burning" limestone (Carbonate of Lime), which expels its Carbonic Acid.

Used in medicine for making *Liquor Calcis*, *Liquor Potassæ*, etc., and is sometimes made into an ointment for skin diseases.

**Calx Chlorata.**—*Chlorinated Lime*, *Chloride of Lime*. “A compound, resulting from the action of Chlorine upon Hydrate of Calcium, and containing at least 25 per cent. of available chlorine,” U. S. Its chief use is as a bleaching powder and disinfectant. In solution it is applied for parasitical skin diseases, ulcers, etc., and is sometimes given in dysentery, fevers, etc., in doses, from 2 to 5 grains, largely diluted. It is also used in poultices.

**Calx Sulphurata.**—*Sulphurated Lime*, *Sulphuret of Lime*, *Sulphide of Calcium*. A mixture of Sulphide and Sulphate of Calcium, containing not less than 36 per cent. of absolute Sulphide of Calcium. It is prepared by mixing powdered (unslacked) lime with precipitated Sulphur in a crucible, and heating to fusion for one hour.

It is given as an antiseptic, in doses of  $\frac{1}{10}$  to  $\frac{1}{2}$  grain. Used in solution as an application in parasitical skin diseases, and by photographers and barbers for removing silver stains.

**CALENDULA**—*Marigold*.—The Pharmacopœia directs the fresh flowering herb of *Calendula officinalis*, but the flowers are generally used. Tonic, alterative, antispasmodic, diaphoretic. Mainly used externally the same as Arnica, in the form of tincture, for cuts, bruises, etc.

Dose of powder, 15 to 60 grains; of fluid extract, 15 to 60 minims; of tincture, 1 to 3 fl.drachms.

**CALUMBA**—*Columbo*.—The root of *Fateorrhiza Calumba*. Bitter tonic. Used in dyspepsia, debility and weakness of digestive organs.

Dose of powder, 10 to 30 grains; of fluid extract, 10 to 30 minims; of infusion (1870), 1 to 2 fluidounces; of tincture (1870),  $\frac{1}{2}$  to 1½ fluidrachms; of tincture (1880), 1 to 2 fluidrachms.

**CALYCANTHUS FLORIDUS**—*Carolina Allspice*.—The bark. Stimulant, antispasmodic, tonic, etc. In chronic ague, etc.

Dose of powder, 15 to 60 grains; of fluid extract, 15 to 60 minims.

**CAMBOGIA**—*Gamboge*.—A gum-resin from *Garcinia Hanburii*. Hydragogue cathartic; mainly used in cathartic pills.

Dose of powder, 1 to 5 grains.

**CAMPHORA**—*Camphor*.—“A stearopten, derived from *Cinnamomum Camphora*, and purified by sublimation,” U. S. A respiratory stimulant, diaphoretic and anaphrodisiac.

Dose, 2 to 20 grains; of camphor water, 2 to 6 fluidrachms. Camphor is used externally in the form of cerate, camphor ice, camphor liniment, camphor spirit, etc.

**CAMPHORA MONOBROMATA**—*Monobromated Camphor*.—Used in epilepsy, chorea and other nervous diseases.

Dose 2 to 8 grains.

**CANELLA**.—The bark of the stem of *Canella alba*. Aromatic, stimulant, tonic. Used mainly to prevent griping of purgatives.

Dose of powder, 5 to 40 grains; of fluid extract, 5 to 40 minims.

**CANNABIS AMERICANA**—*American Cannabis*, *American Hemp*.—The flowering plant *Cannabis sativa*. Properties similar to *Cannabis Indica*, but much weaker.

Dose of powder, 2 to 10 grains; of fluid extract, 2 to 10 minims.

**CANNABIS INDICA**—*Indian Cannabis*, *Indian Hemp*, *Hasheesh*.—The flowering tops of the female plants, *Cannabis sativa*.

Intoxicant, exhilarant, etc. Used in tetanus, delirium tremens, insanity, and nerve tension.

Dose of powder, 2 to 5 grains; of extract, 1 to 3 grains; of fluid extract, 2 to 5 minims; of tincture (1870), 10 to 30 minims; of tincture (1880), 20 to 40 minims.

**CANTHARIDIS**—**Cantharides, Spanish Flies.**—The whole insect. Used internally, in the form of a fluid extract or tincture, as a stimulant to the genital organs, and in catarrh of the bladder, etc., also as a diuretic.

Dose of fluid extract, 1 to 3 minims; of tincture, 5 to 15 minims.

The other preparations of Cantharides are used externally as counter-irritants or vesicants, either in liquid form or in the form of cerates, plasters, etc.

**CAPSELLA**—**Shepherd's Purse.**—The herb *Capsella Bursa Pastoris*. Stimulant, aromatic. Used in dysentery, suppressed menses, etc.

Dose of powder, 1 to 2 drachms; of fluid extract, 1 to 2 fl.drachms.

**CAPSICUM**—**Red Pepper, Cayenne Pepper, Bird Pepper.**—Stimulant, stomachic. In dyspepsia, cholera, cholera-morbus, etc.

Dose of powder, 3 to 10 grains; of fluid extract, 3 to 10 minims; of infusion (1870), 1 to 4 fluidrachms.; of tincture, 20 to 60 minims.

The Oleoresin is seldom used internally, but employed for making capsicum plaster, etc. The 1880 tincture is about one-third stronger than the 1870.

**CARBO ANIMALIS**—**Animal Charcoal, Ivory Black, Bone Black.**—Prepared from bone.

Purified Animal Charcoal is the only form used in medicine. This is mainly used as a medium for filtering substances which are required to be decolorized or deodorized.

**CARBO LIGNI**—**Charcoal.**—Prepared from Wood. Willow Charcoal is preferred in medicine. It is absorbent and antiseptic, and is used chiefly in dyspepsia, flatulence, acid stomach, and blood poisoning from absorption of pus.

Dose, 1 to 2 teaspoonsful, mixed with water or mucilage.

It is a useful ingredient in poultices, for ulcers and running sores.

**CARBONEI BISULPHIDUM**—**Bisulphide of Carbon.**—Made by distilling sulphur and charcoal together. It is used chiefly for dissolving rubber, resins, fats, etc., and sometimes as a refrigerant externally. It is very inflammable.

**CARDAMOMUM**—**Cardamom.**—The seeds of *Elettaria Cardamomum*, inclosed in their capsules. Aromatic, stimulant, carminative. Used mainly as flavoring in medicines, and as a grateful stomachic.

Dose of powder, 10 to 30 grains; of fluid extract, 10 to 30 minims; of compound fluid extract, 20 to 40 minims; of tincture,  $\frac{1}{2}$  to 2 fl.drachms; of compound tincture,  $\frac{1}{2}$  to 2 fl.drachms.

**CARDUUS BENEDICTUS**—**Blessed Thistle.**—The leaves and tops of *Cnicus Benedictus*. Bitter tonic. In dyspepsia and liver complaints.

Dose of powder, 20 to 60 grains; of fluid extract, 20 to 60 minims.

**CARMINUM**—**Carmine.**—The red coloring matter of cochineal. Used mainly as a coloring matter in powder, as in tooth or face powders, or in solution, by the aid of Water of Ammonia, in elixirs, syrups, etc.



**CARNIS EXTRACTUM**—Extract of Meat.—As made by different manufacturers the extracts vary greatly in composition. Liebig's Extract is best for Wine of Beef and Iron, as it contains no albumen, which would be precipitated by the wine. Extract of meat is nutritive and stimulant. It is given dissolved in hot water, or combined with wine, or wine and iron.

**CAROTA**—Carrot.—The fruit (seed) of *Daucus Carota*. Stimulant and diuretic. Used in diseases of the kidney and bladder; mainly in dropsy.

Dose of powder, 30 to 60 grains; of fluid extract, 30 to 60 minims.

**CARTHAMUS**—American Saffron.—Safflower. The flowers of *Carthamus tinctorius*. Diaphoretic, slightly laxative; also used for coloring.

Dose of powder, 20 to 60 grains; of fluid extract, 20 to 60 minims; of infusion,  $\frac{1}{2}$  to 4 fl.ounces.

**CARUM**—Caraway.—The fruit (seed) of *Carum carvi*. Aromatic, stomachic, carminative. Used mainly as a flavoring for other medicines.

Dose of powder, 10 to 30 grains; of fluid extract, 10 to 30 minims; of oil, 2 to 10 minims; of spirit (1:16) 1 to 2 fl.drachms.

**CARYA ALBA**—Hickory.—Shell-bark Hickory. The inner bark. Tonic, astringent.

Dose of powder, 30 to 60 grains; of fluid extract, 30 to 60 minims.

**CARYOPHYLLUS**—Cloves.—The flower buds of *Eugenia caryophyllata*. Aromatic, stimulant, carminative. In colic, flatulence, etc.

Dose of powder, 10 to 30 grains; of fluid extract, 10 to 30 minims; of oil, 1 to 3 minims; of spirit (1:16) 10 to 20 minims.

The oil, on cotton, is a popular remedy for toothache.

**CASCARA AMARGA**—Honduras Bark.—The bark of *Picramnia pentandra*. Alterative and tonic. In scrofula, syphilis, etc.

Dose of powder, 20 to 40 grains; of fluid extract, 20 to 40 minims.

**CASCARA SAGRADA**.—(See *Rhamnus Purshiana*).

**CASCARILLA**.—The bark of *Croton Eluteria*. Stimulant, stomachic, tonic. In dyspepsia, fevers, etc.

Dose of powder, 10 to 20 grains; of fluid extract, 10 to 30 minims; of infusion (1870), 1 to 3 fl.ounces.

The powder is sometimes mixed with tobacco, which, when smoked, has the odor of musk.

**CASSIA FISTULA**—Purging Cassia.—The fruit. Laxative; generally used with other remedies in making confections, fruit laxatives, etc. Dose of powder, 1 drachm to 1 ounce.

**CASTANEA**—Chestnut Leaves.—The best preparation is a fluid-extract made from the green leaves. Sedative, astringent. Used mainly in whooping-cough.

Dose of fluid extract, 30 to 60 minims; of fluid extract from green leaves, 20 to 40 minims.

**CASTOREUM**—Castor, Beaver Castor.—An animal secretion, similar to musk, from the beaver. Stimulant, antispasmodic. Used in hysteria, and for fits generally.

Dose from 5 to 30 grains; of tincture (1:20),  $\frac{1}{2}$  to 1 fl.drachm.

**CATALPA**—Cigar Tree, Bean Tree.—The bark of *Bignonia Ca-*

*talpa*. Tonic, vermifuge, alterative. The pods are used for asthma and dyspepsia.

Dose of powder, 20 to 60 grains; of fluid extract, 20 to 60 minims.

**CATARIA**—Catnep, Catmint.—The leaves and flowering tops of *Nepeta Cataria*. Gentle laxative, stomachic, hypnotic. Used mainly for infants, colic and sleeplessness.

Dose of powder, 20 to 60 grains; of fluid extract, 20 to 60 minims; of infusion (1:10), 1 to 4 fl.drachms.

**CATECHU**—Cutch. Terra Japonica.—An extract prepared from the wood of *Acacia Catechu*. Powerful astringent. In diarrhœa, and other diseases requiring an astringent.

Dose of powder, 2 to 20 grains; of fluid extract, 5 to 60 minims; of compound tincture (1880), 30 to 120 minims; of tincture (1870), 40 to 120 minims.

**CAULOPHYLLUM**—Blue Cohosh.—The rhizome and rootlets of *Caulophyllum thalictroides*. Diuretic, emmenagogue, parturient. In dropsy, rheumatism, hysteria, etc.

Dose of powder, 10 to 40 grains; of fluid extract, 10 to 40 minims; of compound fluid extract, 15 to 60 minims.

**CEANOTHUS**—Jersey Tea, Red Root.—The root of *Ceanothus Americanus*. Alterative, astringent, expectorant. In syphilis, dysentery, lung diseases, etc.

Dose of powder, 30 to 60 grains; of fluid extract, 30 to 60 minims.

**CELASTRUS**—False Bittersweet, Staff Tree.—The root bark of *Celastrus scandens*. Alterative. Used in syphilis, scrofula and glandular enlargements.

Dose of powder, 1 to 2 drachms; of fluid extract, 1 to 2 fl.drachms.

Ointment made by steeping the fresh bark in hot lard is much esteemed in scrofulous eruptions.

**CERA ALBA**—White Wax.—Prepared from Yellow Wax, by bleaching it by the aid of sunlight and moisture. It is used in cerates, cold cream, camphor ice, etc., and for making wax flowers, models, etc.

**CERA FLAVA**—Yellow Wax.—The honeycomb of *Apis Mellifica*. Prepared by melting the comb, skimming and straining into vessels containing a little water. The impurities settle to the bottom, and may be scraped off. Used in ointments, cerates and plasters, and in the arts for many purposes, especially for electrotyping, modeling, etc.

**CERATA**—Cerates.—Preparations containing Wax, and designed to be spread on cloth, and applied for various purposes. They are a medium between ointments and plasters, having more consistence than the former, and less than the latter. (See page 70.)

**CERESINUM**—Ceresin. *Ozokerite*. Mineral Wax.—A wax obtained from the earth, very much resembling yellow wax. It is considerably used in place of bees-wax.

**CERCIS CANADENSIS**—Judas Tree.—The root bark. Astringent with a special alterative action on the intestinal mucous membrane. In diarrhœa of infants, cholera infantum, etc.

Dose of powder, 15 to 30 grains; of fluid extract, 15 to 30 minims.

**CEREUS**—Cactus.—The plant or flowers of several species of Cactus. A saturated tincture or green plant fluid extract is made from the fresh flowers of *Cactus grandiflorus*, and also from the fresh or dried plant *Cereus Bonplandii* and *Cereus McDonaldii*.



The preparations of Cactus are nerve sedatives; used mainly in diseases of the heart.

Dose of saturated tincture, or fluid extract, from 10 to 30 minims.

**CERIUM.**—(Ce; 141). A metal but little known except by its salts.

**Cerii Nitras.**—Nitrate of Cerium is a colorless, crystalline salt. Soluble in Alcohol or Water.

**Cerii Oxalas.**—Oxalate of Cerium is a white powder insoluble in Alcohol and Water. The cerium salts are mainly used for vomiting in pregnancy.

Dose of either the nitrate or oxalate, 2 to 10 grains.

**CEPHALANTHUS**—**Button Bush.**—The bark of *Cephalanthus occidentalis*. Laxative, diuretic, tonic. Used in periodical fevers, syphilis, etc.

Dose of powder, 20 to 60 grains; of fluid extract, 20 to 60 minims.

**CETACEUM**—**Spermaceti.**—The crystalline fat from the head of the sperm-whale. Used in ointments and laundry wax. It is sometimes given internally as a demulcent, for intestinal irritation. For internal use, it is best given in powder, mixed with 3 parts of sugar.

**CETRARIA**—**Iceland Moss.**—The dried lichen *Cetraria Islandica*. Demulcent, bitter tonic, nutrient. Used in pulmonary complaints, dysentery, etc.

Dose of decoction, 3 to 4 fl.ounces; of fluid extract, as a tonic, 1 to 2 fl.drachms.

**CHARTÆ**—**Medicated Papers.**—(See page 76.) Cantharides, mustard, and saltpetre papers, are the only ones officinal.

**CHELIDONIUM**—**Celandine, Tetterwort.**—The herb. *Chelidonium majus*. Purgative; acts on the liver. In jaundice and liver diseases.

Dose of powder, 15 to 60 grains; of fluid extract, 15 to 60 minims; of infusion (1:10), 1 to 2 fl.ounces.

**CHELONE GLABRA**—**Balmony, Snake Head, Shell Flower.**—The herb. Laxative, or purgative, in larger doses; also vermifuge.

Dose of powder, 1 to 2 drachms; of decoction (1:10), 1 to 2 fl.ounces; of fluid extract, 1 to 2 fl.drachms.

**CHENOPODIUM**—**American Wormseed.**—The seed (fruit) of *Chenopodium ambrosioides*. Anthelmintic, vermifuge.

Dose of powder, 15 to 60 grains; of fluid extract, 15 to 60 minims; of oil, 3 to 10 minims.

**CHIMAPHILA**—**Pipsissewa, Prince's Pine.**—The leaves of *Chimaphila umbellata*. Diuretic, alterative, astringent, tonic. Used mainly as a diuretic and astringent in urinary diseases.

Dose of powder, 1 to 2 drachms; of decoction (1:16), 1870, 1 to 3 fl.ounces; of fluid extract, 1 to 2 fl.drachms.

**CHINA.**—The rhizome of *Smilax China*. Properties similar to sarsaparilla, but more active.

Dose of powder, 20 to 60 grains; of fluid extract, 20 to 60 minims.

**CHINOIDINUM**—**Chinoidin, Quinoidin.**—A residue of Quinine manufacture, representing the uncrystallizable alkaloids of the bark. It is often miscalled Extract of Bark. Antiperiodic; uses similar to quinine, but larger doses are required. It is largely used in patent ague mixtures, and pills.

Dose, 3 to 12 grains.

**CHINOLINA**—Chinoline, Quinoline.—An alkaloid recently obtained from coal tar, having properties similar to quinine. The Tartrate of Chinoline is mainly used as an antipyretic in fevers, diphtheria, etc.

Dose, 5 to 15 grains for adults.

**CHIOCOCCA**—Cahinca.—The root bark of *Chiococca Racemosa*. Diuretic, purgative, emetic. In dropsy, rheumatism, syphilis, etc.

Dose of powder, 20 to 60 grains; of fluid extract, 20 to 60 minims.

**CHIONANTHUS**—Fringe Tree.—The root bark of *Chionanthus virginica*. Alterative, aperient, diuretic. Used in fevers, liver complaint, etc.

Dose of powder, 30 to 90 grains; of fluid extract, 30 to 90 minims; of green plant fluid extract, 20 to 40 minims.

**CHIRATA**.—The whole plant *Ophelia Chirata*. Bitter stomachic. Properties similar to gentian.

Dose of powder 30 to 90 grains; of fluid extract, 30 to 90 minims; of infusion (1:16), 1 to 3 fl.ounces; of tincture, 1 to 2 fl.drachms.

**CHLORAL**—Chloral Hydrate.—Prepared by passing chlorine gas through absolute alcohol for several weeks, concentrating the vapor, treating with sulphuric acid, rectifying over calcium carbonate, which makes the pure chloral; this is then mixed with the proper quantity of water, and cast into cakes or crystallized. Hypnotic and antispasmodic. Used for sleeplessness, convulsions, delirium mania, delirium tremens, or any nerve-strain.

Dose, 5 to 30 grains.

Great caution must be exercised not to produce a cumulative effect of the drug. In poisoning by chloral, use stimulants and artificial respiration.

**CHLORATÆ SODÆ LIQUOR**—Solution of Chlorinated Soda, Labarraque's Solution.—(See page 243.) Used mainly as a disinfectant, and also as a wash for foul ulcers and sores. It may also be used diluted as a gargle.

**CHLOROFORMUM PURIFICATUM** — Purified Chloroform.—(See page 78.) Commercial Chloroform is purified by shaking 100 parts frequently during 24 hours, with 20 parts of Sulphuric Acid, separating the lighter liquid, adding to it 5 parts of Carbonate of Sodium, dissolved in 10 parts of Water, agitating the mixture for half an hour, then separating the Chloroform from the supernatant layer, mixing it with 1 part of Alcohol, transferring to a dry retort, adding  $\frac{1}{2}$  part of Lime, and distilling off the chloroform thus purified. Purified chloroform is given internally, largely diluted, as an antispasmodic and sedative, the dose being from 1 to 20 minims, but is most frequently given by inhalation, as an anæsthetic. It is useful in spasmodic diseases, convulsions, etc. Externally, it is employed as an anodyne and counter-irritant for neuralgia, rheumatism, etc.

Dose of chloroform mixture, 2 to 4 fl.drachms; of spirit, 20 to 60 minims.

**CHLOROFORMUM VENALE**—Commercial Chloroform.—“A liquid containing at least 98 per cent. of Chloroform.” U. S. sp. gr. not lower than 1.47. This is used mainly for making purified chloroform, and for external use.

Chloroform Liniment is directed to be made from the Commercial Chloroform.

**CHLORUM**—Chlorine.—(Cl.; 35.4.) A gaseous element, known chiefly by its salts. It is a powerful decolorizer and disinfectant.

**Chlori Aqua.**—Chlorine Water. Water charged with chlorine gas. It is used as an antiseptic and disinfectant lotion for sores and ulcers; also as a gargle in sore throat, and is given for foul breath, ulcers in the stomach, etc., in doses of 1 to 3 fl.drachms, diluted.

**CHONDRUS**—Irish Moss, Carrageen.—Species of sea algæ, bleached and dried. Bland, mucilaginous, demulcent, nutritive. Mainly used in medicine cooked to a jelly, as a food for invalids.

**CHROMUM.**—(Cr. 52.4.) A metallic element found with iron. It is known chiefly in its combinations.

**CHRYSAROBINUM**—Chrysarobin.—Extracted from Goa-powder, and commonly misnamed Chrysophanic Acid. It is mainly used in ointment as an application for parasitic skin diseases. The ointment is official.

**CHRYSOPHYLLUM**—Monesia.—The bark of *Chrysophyllum Glycyphlaum*. Alterative, stomachic, slightly astringent. In diarrhœa, spitting of blood, scrofula, dyspepsia, etc.

Dose of powder, 30 to 60 grains; of fluid extract, 30 to 60 minims.

**CICHORIUM**—Chicory.—The root of *Cichorium Intybus*. Slightly tonic, laxative, and diuretic. Used for the same purposes as Taraxacum.

Dose of powder, 30 to 90 grains; of fluid extract, 30 to 90 minims.

Chicory is used to adulterate ground coffee, and the fluid extract is used by some manufacturers to adulterate other more expensive fluid extracts, especially Taraxacum.

**CIMICIFUGA**—Black Cohosh.—The rhizome and rootlets of *Cimicifuga racemosa*. Sedative, antiphlogistic, tonic, etc. Used for congestion, nervous pain, rheumatism, inflammation, coughs, etc.

Dose of powder, 10 to 30 grains; of extract, 1 to 5 grains; of fluid extract, 10 to 30 minims; of green plant fluid extract, 5 to 20 minims; of tincture, 30 to 90 minims.

**CINCHONA**—Peruvian Bark.—(See page 78.) The bark of various species of Cinchona. Bitter tonic, antiperiodic, astringent. In fevers, fever and ague, malaria, and as a general tonic, etc.

Dose of powder, 20 to 60 grains; of decoction (1870),  $\frac{1}{2}$  to  $1\frac{1}{2}$  fl.ounces; of extract, 5 to 20 grains; of fluid extract, 15 to 75 minims; of aromatic fluid extract, 15 to 75 minims; of detannated fluid extract, 15 to 75 minims; of infusion,  $\frac{1}{2}$  to 3 fl.ounces; of tincture,  $\frac{1}{2}$  to  $1\frac{1}{2}$  fl.drachms; of compound tincture,  $\frac{1}{2}$  to 2 fl.drachms.

The doses of the various preparations of Cinchona vary somewhat according to the kind and quality of bark used, but the foregoing are the general average of doses. *Cinchona flava* (Calisaya) and *Cinchona rubra* (Red Cinchona), are the only official varieties of bark, but many other kinds are used.

**CINCHONIDINA**—Cinchonidine, Cinchonidia.—An alkaloid of Cinchona, having the same general properties as quinine, but somewhat less active. Tonic and antiperiodic.

Dose, 1 to 20 grains.

**Cinchonidinæ Sulphas.**—Sulphate of Cinchonidine or Cinchonidia. A salt of the foregoing alkaloid. Properties and dose the same as above.

**CINCHONINA**—Cinchonine, Cinchonina.—An alkaloid of cinchona, having the same general properties as quinine, but less active.

Dose, 1 to 20 grains.

**Cinchoninæ Hydrochloras.**—Hydrochlorate or Muriate of Cinchonine. A salt of cinchonine. Properties and dose the same as above.

**Cinchoninæ Sulphas.**—Sulphate of Cinchonine or Cinchonina. A salt of cinchonine. Properties and dose the same as above.

**CINNAMOMUM**—Cinnamon, Cassia.—The inner bark from the shoots of *Cinnamomum zeylanicum*, and other species. Aromatic, stimulant. Used as an agreeable flavoring ingredient in many medicines, and as a stimulant to check hemorrhage, etc.

Dose of powder, 15 to 60 grains; of fluid extract, 15 to 60 minims; of oil, 1 to 5 minims; of spirit or essence, 20 to 30 minims; of water,  $\frac{1}{2}$  to 1 fl.ounce.

**Cassia Buds.**—The immature fruit of the Chinese cinnamon tree. Properties the same as bark, but weaker.

**COCCULUS INDICUS**—Fish-berries.—The fruit of *Anamirta Cocculus*. Mainly used externally, in the form of a decoction or ointment to kill parasites, cure ringworm, etc.; but sometimes given in epilepsy, chorea, and other nervous diseases.

Dose of powder, 1 to 2 grains; of fluid extract, 1 to 2 minims.

**Picrotoxinum.**—A neutral principle prepared from *Cocculus Indicus*. Is official. It is used for the same purposes as the seed.

Dose,  $\frac{1}{100}$  to  $\frac{1}{80}$  grain.

**COCCUS**—Cochineal.—The female of *Coccus cacti*. Used mainly for coloring, but sometimes given for whooping or other spasmodic cough.

Dose of powder, 1 to 3 grains.

Tincture of Cochineal, for coloring liquids, is made by percolating 1 part of powdered Cochineal with 5 parts of Diluted Alcohol. *Carmine* is made from Cochineal.

**COCHLEARIA** — Scurvy Grass.—The whole herb *Cochlearia officinalis*. The fresh herb should be used. Antiscorbutic, diuretic. Used for scurvy, hemorrhages from the mouth and nose, bleeding gums, etc.; and, externally, as a poultice for scrofulous sores.

Dose of fresh herb,  $\frac{1}{2}$  to 1 ounce; of fresh juice,  $\frac{1}{2}$  ounce; of fluid extract, 2 to 4 fl.drachms; of spirit, or compound spirit, 2 to 4 fl.drachms.

**CODEINA**—Codeine, Codeia.—(See page 80.) An alkaloid from Opium. Properties similar to Morphine, but weaker, and without the disagreeable after effects of Morphine. Anodyne, hypnotic.

Dose,  $\frac{1}{4}$  to 1 grain.

**Syrup of Codeine** is made by dissolving 8 grains of Codeine in 1 ounce of boiling water, and adding 7 ounces of simple syrup.

Dose, 1 to 2 fl.drachms.

**COLCHICI RADIX**—Colchicum Root.—The root of *Colchicum autumnale*. Acts on the bowels, kidney and liver. Used for gout, rheumatism, etc.

Dose of powder, 2 to 10 grains; of extract,  $\frac{1}{2}$  to 2 grains; of fluid extract, 2 to 10 minims; of tincture (1:4), 5 to 20 minims; of wine, 10 to 30 minims.

**COLCHICI SEMEN**—Colchicum Seed.—The seed of *Colchicum autumnale*. Properties and uses the same as the root, but about double the strength. Preparations made from the seed are therefore preferred.

Dose of powder, 1 to 5 grains; of fluid extract, 2 to 10 minims; of tincture, 10 to 30 minims; of wine, 20 to 50 minims.

**COLLINSONIA**—Stone-Root, Ox-balm, Heal-all.—The root of

*Collinsonia Canadensis*. Stimulant. Used in catarrh of the bladder, dropsy, stone in the bladder, etc.

Dose of powder, 10 to 30 grains; of fluid extract, 10 to 30 minims; of green plant fluid extract, 5 to 20 minims.

**COLLODIUM**—Collodion.—(See page 80.) Made by dissolving Gun Cotton in Ether and Alcohol. It is used as an artificial skin to cover wounds, protect surfaces, etc.

*Cantharidal Collodion* is used for producing blisters.

*Flexible Collodion* is used as a dressing for bruised or abraded surfaces.

*Slyptic Collodion* is used to check the flow of blood, etc.

**COLOCYNTHIS**—Colocynth.—The pulp of the fruit of *Citrullus Colocynthis*. Bitter, stomachic, in small doses; drastic, hydragogue cathartic, in large doses. Used in constipation, dropsy, etc.

Dose of powder, as a laxative, 2 to 5 grains; as a purgative, 5 to 10 grains; of extract,  $\frac{1}{2}$  to 2 grains; of compound extract, 3 to 8 grains; of fluid extract, 2 to 10 minims; of tincture (1:5), 3 to 10 minims, as a stomachic.

**COMPTONIA ASPLENIFOLIA**—Sweet Fern.—The plant. Tonic, astringent, alterative. In diarrhoea, hemorrhage, etc.

Dose of powder,  $\frac{1}{2}$  to 2 drachms; of fluid extract,  $\frac{1}{2}$  to 2 fl.drachms.

**CONFECTIONES**—Confections.—(See page 83.) Prepared by beating medicinal substances with sugar or honey, until they are of a uniform pilular consistence. They are mainly used as excipients for pills, and for making so-called fruit laxatives, etc.

**CONIUM**—Cicuta, Poison Hemlock.—The fruit or leaves of *Conium maculatum*. The fruit (seed) only is now officinal. Anodyne, sedative, especially of the muscular system. Used in chorea, coughs, asthma, etc., and also, externally, as a poultice.

Dose of powdered fruit,  $\frac{1}{2}$  to 3 grains; of powdered leaves, 3 to 10 grains; of abstract, 1 to 4 grains; of extract of fruit,  $\frac{1}{3}$  to 1 grain; of extract of leaves,  $1\frac{1}{2}$  to 4 grains; of fluid extract of fruit, 2 to 5 minims; of fluid extract of leaves, 3 to 10 minims; of juice of leaves, 30 to 60 minims; of tincture of fruit, 15 to 60 minims; of tincture of leaves, 30 to 60 minims.

**CONVALLARIA MAJALIS**—Lily of the Valley.—The rhizome, and also the flowers. Heart stimulant; also purgative and vermifuge. Used in collapse, opium poisoning, fevers, epilepsy, etc.

Dose of powder, 10 to 30 grains; of fluid extract, 10 to 30 minims.

**CONVULVULUS PANDURATUS**—Wild Jalap, Wild Potato, Man Root.—The root. Diuretic, gentle cathartic. In dropsy, and diseases of the kidney and bladder.

Dose of powder, 20 to 60 grains; of fluid extract, 20 to 60 minims.

**COPAIBA**—Balsam of Copaiba.—An oleoresin, mis-named "balsam," from various species of *Copaifera*. A balsamic stimulant, chiefly used in gonorrhoea, but may be employed generally in catarrhal conditions of the urinary organs and bronchial tubes.

Dose, 10 to 60 minims; of copaiba mass, 10 to 50 grains; of oil of copaiba, 5 to 15 minims; of resin, 3 to 10 grains.

**COPTIS**—Gold-thread.—The entire plant *Coptis trifolia*. Bitter tonic. Used for dyspepsia and stomach troubles.

Dose of powder, 30 to 60 grains; of fluid extract, 30 to 60 grains; of infusion (1:10), 2 to 6 fl drachms.

It is also used as a lotion, or gargle, for sore mouth.



**COPTIS TEETA**—Mishmi Bitter, Tita.—The rhizome. Its value consists in its *berberine*, of which it contains more than any other known drug. Bitter tonic.

Dose of powder, 10 to 30 grains; of fluid extract, 10 to 30 minims.

**CORALLORHIZA**—Coral Root, Crawley.—The root of *Corallorhiza odontorhiza*. Diaphoretic, without producing heat or fever. Used mainly in influenza, fevers, etc.

Dose of powder, 10 to 30 grains; of fluid extract, 10 to 30 minims.

**CORIANDRUM**—Coriander.—The fruit (seed) of *Coriandrum sativum*. Aromatic, stimulant, carminative. Used mainly as an addition to other medicines, and to prevent griping of purgatives.

Dose of powder, 10 to 30 grains; of fluid extract, 10 to 30 minims; of oil, 1 to 5 minims; of spirit, 30 to 60 minims.

**CORNUS**—Dogwood, Boxwood.—The inner root bark of *Cornus florida*. Bitter tonic, stomachic, astringent.

Dose of powder, 15 to 60 grains; of decoction (1870), 1 to 2 fl.ounces; of fluid extract, 15 to 60 minims.

**CORNUS CIRCINATA**—Round Leaved Dogwood.—The bark. Properties, uses and doses similar to those of *Cornus florida*.

**CORNUS SERICEA**—Swamp Dogwood.—The bark. Properties, uses and doses similar to those of *Cornus florida*.

**CORYDALIS**—Turkey Corn, Squirrel Corn.—The tubers of *Dicentra Canadensis*. Bitter tonic, alterative, diuretic. Used in scrofula, syphilis and kidney diseases.

Dose of powder, 10 to 30 grains; of fluid extract, 10 to 60 minims; of green plant fluid extract, 10 to 30 minims.

**CORYPHA CEREFERA**—Carnauba, Wax Palm.—Astringent, diuretic, etc.

Dose of powder, 20 to 60 grains: of fluid extract, 20 to 60 minims.

**COTO**.—The bark of a yet unknown South American tree. Tonic, astringent. Used in dysentery, diarrhoea, night sweats, and consumption.

Dose of powder, 1 to 10 grains; of fluid extract, 1 to 10 minims.

**CREASOTUM**—Creasote.—A product of the destructive distillation of wood, sometimes called Oil of Soot or Oil of Smoke. Properties similar to Carbolic Acid. It is used internally to check vomiting and in fermentive diarrhoea, etc.

Dose, 1 to 2 minims largely diluted; of Creasote Water 1 to 4 fl.drachms. It is most used as a remedy for tooth-ache.

**CRETA PRÆPARATA**—Prepared Chalk.—Chalk freed from its impurities by elutriation. (See Calcium Carbonate.) Antacid. Used in diarrhoea, especially of children.

Dose of powder, 10 to 60 grains; of Chalk mixture 1 to 8 fl.drachms; of Compound Chalk powder 30 to 90 grains; of Chalk troches 2 to 5.

**CROCUS**—Saffron.—The stigmas of *Crocus sativus*. True Saffron must not be confounded with American Saffron *Carthamus tinctorius*. Stimulant, aromatic, slightly anodyne and antispasmodic. Mainly used as a coloring and flavoring ingredient for other medicines.

Dose of powder, 5 to 30 grains; of fluid extract, 5 to 30 minims; of tincture, 1 to 2 fl.drachms.

**CUBEBA**—Cubeb.—The unripe fruit of *Cubeba officinalis*. Aromatic, stimulant, especially of the mucous membrane. Used in catarrh,

throat diseases, gonorrhœa, catarrh of the bladder, etc. Recently used to a great extent for making Cubeb cigarettes.

Dose of powder, 10 to 120 grains; of extract, 10 to 30 grains; of fluid extract, 10 to 60 minims; of oil, 5 to 15 minims; of oleoresin, 5 to 30 minims; of tincture,  $\frac{1}{2}$  to 2 fl.drachms; of troches, 1 to 4.

**CUCUMIS CITRULLUS**—Watermelon Seed.—Diuretic, demulcent, anthelmintic. In kidney and bladder diseases, etc.

Dose of fluid extract, 1 to 3 fl.drachms; of infusion, 4 to 8 fl.ounces.

**CUMINUM**—Cumin.—The fruit (seed) of *Cuminum Cyminum*. Aromatic, stimulant, carminative. Used mainly as an aromatic addition to other medicines.

Dose of powder, 15 to 30 grains; of fluid extract, 15 to 30 minims; of oil, 1 to 2 minims.

The Oil is frequently used by farriers for taming horses.

**CUPRUM**—Copper.—(Cu.; 63.2). A well known useful metal.

**CUPRI ACETAS**—Acetate of Copper, Verdigris.—The pure crystallized Acetate of Copper is made by dissolving green verdigris in a slight excess of Acetic Acid, filtering and crystallizing. Given in epilepsy, chorea and other nervous diseases. Also used in ointment, etc.

Dose  $\frac{1}{8}$  to  $\frac{1}{4}$  grain.

**Rademacher's Tincture of Acetate of Copper** is made by dissolving 1 part of Crystallized Acetate of Copper in 12 parts of warm water, and, when cool, adding 6 parts of Alcohol.

Dose, 2 to 5 minims.

**CUPRI SULPHAS**—Sulphate of Copper, Blue Vitriol.—Used as an emetic in croup, poisoning, etc., and in small doses as a neurotic, tonic and astringent. It is used externally as a lotion for indolent sores, ulcers, etc.

Dose, as an emetic, 2 to 5 grains, every 10 to 15 minutes, until the required effect is produced; as a tonic,  $\frac{1}{4}$  to 1 grain.

**CURARE**—Wourara.—An unknown South American arrow poison. Causes paralysis of the voluntary muscles, and has been used in tetanus, and other nervous diseases.

Dose from  $\frac{1}{10}$  to  $\frac{1}{4}$  grain.

**CURCUMA**—Turmeric.—The rhizome of *Curcuma longa*. Warm stimulant. Used mainly for coloring medicinal preparations, and as an addition to pickles, etc. It is one of the chief ingredients of the favorite condiment Curry Powder. It is rarely given as medicine.

**CUNDERANGO**—Conderango.—The bark of *Pseumagennetus equatoriensis*. Alterative, tonic. Used in syphilis, scrofula, etc. It has had a considerable reputation as a cure for cancer.

Dose of powder, 40 to 120 grains; of fluid extract,  $\frac{1}{2}$  to 2 fl.drachms.

**CUNILA MARIANA**—American Dittany.—The herb or root. Antispasmodic, diaphoretic. Used in fever, flatulence, colic.

Dose of powder, 1 to 2 drachms; of fluid extract, 1 to 2 fl.drachms.

**CYDONIUM**—Quince Seed.—The ripe seeds of *Cydonium vulgare*. Mucilaginous. The mucilage is used as a remedy for obstinate vomiting and irritable stomach, and as a vehicle for other remedies, but mainly used for making Bandoline.

Dose of mucilage, *ad libitum*.

**CYNOGLOSSUM**—Houndstongue.—The root of *Cynoglossum*



*officinale*. Narcotic. Acts on the voluntary muscles similar to Curare; also tonic and astringent.

Dose of powder, 20 to 60 grains; of fluid extract, 20 to 60 minims.

**CYPERUS ARTICULATUS**—*Adrue*.—The root. Used in vomiting, in fevers, and typhoid conditions.

Dose of powder, 20 to 30 grains; of fluid extract, 20 to 30 minims.

**CYPRIPEDIUM**—*Ladies' Slipper, American Valerian*.—The rhizome and rootlets of *Cypripedium pubescens*. A nerve sedative, antispasmodic, diaphoretic and tonic. Used in headache, nervousness, wakefulness, etc.

Dose of powder, 15 to 30 grains; of fluid extract, 15 to 30 minims; of green plant fluid extract, 10 to 20 minims.

**DAMIANA**.—The leaves of *Turnera aphrodisiaca* and other species of *Turnera*. Diuretic, stimulant. Used for impotence, urinary troubles, etc.

Dose of powder, 1 to 2 drachms; of fluid extract, 1 to 2 fl.drachms.

**DATURA STRAMONIUM**.—See Stramonium.

**DECOCTA**—*Decoctions*.—Preparations made by boiling drugs in water to exhaust their strength. (See page 85).

**DELPHINUM**—*Larkspur Seed*.—The seed of *Delphinium consolida*. Chiefly used in the form of a decoction for killing lice and other parasites. Sometimes given as a diuretic or cathartic.

Dose of powder, 1 to 3 grains; of fluid extract, 1 to 3 minims.

**DELPHINUM STAPHISAGRIA**—*Stavesacre*.—The seed. Used to destroy vermin; usually in the form of a decoction.

**DIGITALIS**—*Foxglove*.—The freshly dried leaves of *Digitalis purpurea*; gathered while in blossom in its second year's growth. An excito-motor and heart stimulant; also diuretic and nerveine.

Dose of powder, 1 to 5 grains; of abstract, 1 to 3 grains; of extract  $\frac{1}{10}$  to  $\frac{1}{2}$  grain; of fluid extract, 1 to 5 minims; of infusion,  $\frac{1}{4}$  to 1 fluid-ounce; of tincture, 5 to 40 minims.

**Digitalin**.—A "concentration" by this name was officinal in the 1870 pharmacopœia, but, as it was an uncertain preparation, it has very properly been dismissed. Its properties were the same as Digitalis; the dose  $\frac{1}{10}$  to  $\frac{1}{30}$  grain.

**DIOSCOREA**—*Wild Yam*.—The rhizome of *Dioscorea villosa*. Antispasmodic, diaphoretic. Used in bilious colic, cholera morbus, cramps, etc.

Dose of powder, 10 to 30 grains; of extract, 1 to 5 grains; of fluid extract, 10 to 30 minims.

**Dioscorin**.—An "active principle" derived from Dioscorea, having the same properties.

Dose,  $\frac{1}{2}$  to 3 grains.

**DIOSPYROS**—*Persimmon*.—The unripe fruit or bark of *Diospyros Virginica*. Astringent. Used in diarrhœa, hemorrhage, etc.

Dose of fruit or bark,  $\frac{1}{2}$  to 2 drachms; of fluid extract,  $\frac{1}{2}$  to 2 fl.drachms.

**DIPTERIX**—*Tonka Bean*.—The seed of *Dipterix odorata*. Used for flavoring and in perfumes.

**Coumarin**.—The odorous principle of the Tonka Bean.

**DIRCA PALUSTRIS**—Leatherwood.—The bark. It is similar to Mezereon, and is used in neuralgia, toothache, paralysis, etc.

Dose of powder, 20 to 40 grains; of fluid extract, 20 to 40 minims.

**DITA**—Dita Bark.—See *Alstonia Scholaris*.

**DRACONTIUM**—Skunk Cabbage.—The root of *Dracontium* (or *Symplocarpus*) *fatidum*. Antispasmodic, stimulant, expectorant. Used in hysteria, chorea, coughs, etc.

Dose of powder, 10 to 60 grains; of fluid extract, 10 to 60 minims; of green plant fluid extract, 5 to 30 minims.

**DROSERA**—Sundew.—The herb *Drosera rotundifolia*. Expectorant, antispasmodic. In whooping-cough, bronchitis, asthma, etc.

Dose of powder, 10 to 20 grains; of fluid extract, 10 to 20 minims.

**DUBOISIA**.—The leaves of *Duboisia myoporoides*. Properties similar to Belladonna.

Dose of powder, 1 to 5 grains; of fluid extract, 1 to 5 minims.

**Duboisinæ Sulphas**.—*Sulphate of Duboisine*. Prepared from Duboisia, and recently introduced as a substitute for atropine, as its effects are less lasting. Used chiefly in diseases of the eye.

**DULCAMARA**—Bittersweet.—The twigs of *Solanum dulcamara*. Narcotic, in large doses. Alterative, diaphoretic, diuretic.

Dose of powder, 30 to 60 grains; of fluid extract, 30 to 60 minims; of infusion (1:10),  $\frac{1}{2}$  to 1  $\frac{1}{2}$  fl.ounces.

**ELATERINUM**—Elaterin.—A colorless crystalline substance extracted from Elaterium. It is several times stronger than Elaterium, and is now introduced in the pharmacopœia for the purpose of furnishing a definite preparation of Elaterium. Properties same as Elaterium.

Dose,  $\frac{1}{20}$  to  $\frac{1}{16}$  grain; of trituration,  $\frac{1}{2}$  to  $\frac{2}{3}$  grain.

**ELATERIUM**.—A resinous substance obtained from the fresh juice of *Ecballium Elaterium*. A powerful hydragogue cathartic.

Dose,  $\frac{1}{12}$  to  $\frac{1}{4}$  grain.

**ELECTUARIA**—Electuaries.—Preparations similar to confections, but of less consistence. They were formerly much employed, but are now but little used.

**ELEMI**—Gum Elemi.—An oleoresin from *Canarium commune*. Stimulant, irritant. Used, medicinally, only in plasters and ointments; also used for making certain varnishes.

**ELEPHANTOPUS TOMENTOSUS**—Elephant's Foot.—The herb. Diaphoretic, expectorant. For coughs, colds, etc.

Dose of powder, 20 to 60 grains; of fluid extract, 20 to 60 minims.

**ELIXIRIA**—Elixirs.—(See page 87.) A class of preparations largely used, which aim to present medicines in elegant and agreeable form.

Only the Elixir of Orange, or simple Elixir, is officinal, but several hundred kinds are furnished by manufacturers. Formulæ for all kinds of elixirs will be found in FENNER'S FORMULARY.

**EMPLASTRA**—Plasters.—(See page 90.) Substances composed of pliable, tenacious compounds and medicated with various substances. The general name plaster applies to the compounds in mass, and also spread ready to apply.

**EMULSIONES**—Emulsions.—Preparations in which oils and similar substances are so mixed with an aqueous vehicle, as to be of a uniform consistence and density. (See page 96).

**ENEMATA—Enemas.**—Injections to be introduced by means of a syringe into the rectum.

**EPHEDRA ANTISYPHILITICA.**—The plant. Used in syphilis and skin diseases.

Dose of powder,  $\frac{1}{2}$  to 1 drachm; of fluid extract,  $\frac{1}{2}$  to 1 fl.drachm.

**EPIGÆA—Trailing Arbutus, Gravel Plant.**—The leaves of *Epigæa repens*. Astringent, diuretic. Used in catarrh of the bladder, kidney diseases, gravel, etc.

Dose of powder, 30 to 120 grains; of fluid extract,  $\frac{1}{2}$  to 2 fl.drachms.

**EPILOBIUM—Wickup, Willow Herb.**—*Epilobium paulustre*. Tonic, astringent, demulcent. Used in chronic diarrhœa, leucorrhœa, and uterine diseases.

Dose of powder, 20 to 40 grains; of fluid extract, 20 to 40 minims; of green plant fluid extract, 15 to 30 minims.

**EPIPHEGUS—Cancer Root, Beech Drops.**—The whole plant. *Epiphegus Virginiana*. Astringent, tonic. Used in internal hemorrhages, diarrhœa, etc.

Dose of powder, 10 to 30 grains; of fluid extract, 10 to 30 minims.

**EQUISTICUM—Horse-tail, Scouring Rush.**—The stems of *Equisetum arvense*. Diuretic, astringent. Used in kidney diseases, dropsy, etc.

Dose of infusion (1:10), 1 to 2 fl.ounces; of fluid extract, 1 to 2 fl.drachms.

**ERECHTHITES HIERACIFOLIA—Fireweed.**—The herb. Tonic, alterative, astringent. Used in dysentery, bowel and stomach troubles, and for piles.

Dose of powder, 30 to 60 grains; of fluid extract, 30 to 60 minims; of oil, 3 to 5 minims.

**EREMOCARPUS SETIGERUS—Ginger Leaf.**—The herb. Stomachic, stimulant, carminative. Increases the appetite and gives tone to the digestive organs.

Dose of powder, 30 to 60 grains; of fluid extract, 30 to 60 minims.

**ERGOTA—Ergot, Spurred or Smut Rye.**—The fungus *Claviceps purpurea*. Found on the heads of rye. Ecbotic, capillary astringent, etc. Used in midwifery, and for hemorrhage, congestion, prolapsus, paralysis of the bladder, incontinence of urine, etc.

Dose of powder, 10 to 30 grains; of extract, 5 to 15 grains; of fluid extract, 10 to 30 minims; of tincture,  $\frac{1}{2}$  to 4 fl.drachms; of wine, 1 to 4 fl.drachms.

**Ergotin.**—A soft, purified extract, obtained from Ergot; is called Bonjean's Ergotin. It is considered the most reliable form of extract.

Dose, 3 to 10 grains. Also used in suppositories.

**ERIGERON—Canada Fleabane.**—The flowering plant *Erigeron Canadense*. Diuretic, astringent. Used in kidney and bladder diseases, dropsy, hemorrhoids, hemorrhage, etc.

Dose of fluid extract, 1 to 2 fl.drachms; of infusion (1:10), 1 to 2 fl.ounces; of oil, 3 to 10 minims.

**ERIODICTYON—Yerba Santa.**—The leaves of *Eriodictyon glutinosum*. A stimulant of the mucous membrane, especially of the bronchial tubes. Used in bronchitis, consumption, coughs, etc.

Dose of powder, 15 to 30 grains; of fluid extract, 15 to 30 minims; of green plant fluid extract, 10 to 20 minims.

**ERYNGIUM AQUATICUM**—Water Eryngo.—The root. Diuretic, stimulant, diaphoretic. Used in dropsy, syphilis, pulmonary diseases, etc.

Dose of powder, 20 to 40 grains; of fluid extract, 20 to 40 minims; of green plant fluid extract, 10 to 30 minims.

**ERYNGIUM YUCCÆFOLIUM**—Corn Snakeroot.—The root. Tonic, stimulant, diaphoretic.

Dose of powder, 15 to 60 grains; of fluid extract, 15 to 60 minims.

**ERYTHROPHLÆUM**—Sassy or Mancona Bark.—The bark of *Erythrophloeum guineense*. Astringent, narcotic, cholagogue, diaphoretic. Used in cardiac dropsy, enlarged spleen, or liver, etc.

Dose of powder, 2 to 3 grains; of fluid extract, 2 to 3 minims.

**ERYTHOXYLON**—Coca.—The leaves of *Erythoxylon Coca*. Stimulant, similar in its action to tea or coffee. It is used to sustain the nervous system, allay hunger or thirst, and in sexual debility.

Dose of powder,  $\frac{1}{2}$  to 2 drachms; of fluid extract,  $\frac{1}{2}$  to 2 fl.drachms.

**ERYTHRACEA**—Canchalagua.—The herb *Erythracea chilensis*. Bitter tonic. Used in intermittent fever, and for coughs, etc.

Dose of powder, 20 to 60 grains; of fluid extract, 20 to 60 minims.

**ESSENTIÆ**—Essences.—Preparations made by dissolving essential oils in Alcohol—called “Spirits,” in the pharmacopœia. Nearly all that are used are officinal.

**ETHYL BROMIDUM**—Ethyl Bromide or Hydrobromic Ether.—Anæsthetic, recently introduced. To be used the same as Chloroform or Ether. It is not inflammable like Ether, and is claimed to be safer than Chloroform.

**EUCALYPTUS**.—The leaves of *Eucalyptus globulus*. Stimulant, tonic, stomachic. Promotes digestion and increases the appetite. Used in bronchial catarrh, dyspepsia, catarrh of the bladder, etc., and in fevers.

Dose of powder, 15 to 60 grains; of fluid extract, 15 to 60 minims; of tincture (1:8), 1 to 2 fl.drachms; of oil, 2 to 5 minims.

**EUPATORIUM AROMATICUM**—White Snakeroot.—The root. Diaphoretic, antispasmodic, expectorant. Used in coughs, fevers, etc.

Dose of powder, 40 to 80 grains; of fluid extract, 40 to 80 minims.

**EUPATORIUM PERFOLIATUM**—Boneset, Thoroughwort.—The leaves and flowering tops. Bitter tonic, diaphoretic, laxative, antibilious, diaphoretic, febrifuge. Used mainly in the form of an infusion.

Dose of powder, 15 to 60 grains; of extract, 1 to 10 grains; of fluid extract, 15 to 60 minims; of infusion (1870),  $\frac{1}{2}$  to 2 fl.ounces.

**EUPATORIUM PURPUREUM**—Queen of the Meadow.—The root and rootlets. Stimulant, diuretic. Used in kidney and urinary diseases.

Dose of powder, 30 to 60 grains; of fluid extract, 30 to 60 minims.

**EUPHORBIA COROLLATA**—Large Flowering Spurge.—The root. Diaphoretic, expectorant, emetic.

Dose of powder, as an expectorant, 2 to 3 grains; as an emetic, 15 to 20 grains; of fluid extract, the same in minims.

**EUPHORBIA HYPERICIFOLIA**—Large Spotted Spurge.—The plant. Astringent, tonic. Used in dysentery and diseased mucous discharge.

Dose of powder, 10 to 20 grains; of fluid extract, 10 to 20 minims; of green plant fluid extract, 5 to 15 minims.

**EUPHORBIA IPECACUANHA**—*Ipecacuanha Spurge*.—The root. Emetic, diaphoretic, expectorant, in large doses, hydragogue cathartic.

Dose of powder, as an expectorant, 1 to 3 grains; as cathartic, 10 to 15 grains; of fluid extract, the same in minims.

**EUPHORBIA PILULIFERA**—*Pill-bearing Spurge*.—The herb. Antispasmodic, tonic, narcotic. Used in asthma, bronchial irritability, etc.

Dose of powder, 10 to 15 grains; of fluid extract, 10 to 15 minims.

**EUPHORBIIUM**.—A gum-resin from *Euphorbia resinifera*. Irritant vesicant. Used mainly as an ingredient in irritating plasters and remedies for ringbones and spavins.

**EUPHRASIA**—*Eyebright*.—The herb *Euphrasia officinalis*. Tonic, astringent. Used in diseases of the mucous membrane, and externally as a wash for catarrhal sore eyes, etc.

Dose of powder, 1 to 2 drachms; of fluid extract, 1 to 2 fl.drachms.

**EUONYMUS**—*Wahoo*.—The bark of *Euonymus atropurpureus*. Tonic, alterative, diuretic, laxative. Used in dyspepsia, constipation, dropsy, etc., and as a general tonic.

Dose of powder, 15 to 60 grains; of extract, 1 to 5 grains; of fluid extract, 15 to 60 grains; of infusion (1:10), 4 to 12 fl.drachms; of green plant fluid extract, 10 to 40 minims.

**EXTRACTA**—*Extracts*.—(See page 98.) Extracts of drugs in solid or semi solid form, containing the soluble medicinal value of the drugs from which they are made, concentrated by evaporation.

**EXTRACTA DESTILLATA**—*Distilled Extracts*.—(See page 114.) Extracts prepared by distillation and containing the volatile principles of the drugs from which they are prepared.

**EXTRACTA FLUIDA**—*Fluid Extracts*.—(See page 116) Extracts of drugs in a fluid form, representing the soluble medicinal value of the drug in an equivalent fluid measure.

**FAGUS FERRUGINA**—*American Beech*.—The inner bark. Tonic, astringent.

Dose of powder, 60 to 120 grains; of fluid extract, 1 to 2 fl.drachms.

**FEL BOVIS**—*Ox-gall*.—The fluid secretion from the gall bladder of the ox. Used as a tonic and purgative in atony of the bowels and constipation. The preparations of Ox-gall, only, are used in medicine.

**Inspissated Ox-gall**.—(See page 222.)

Dose, 5 to 10 grains in form of a pill.

**Prepared Ox-gall**.—(See page 222.) This is the same strength as normal Ox-gall, but so prepared that it will keep. It is used mainly in liniments.

**Purified Ox-gall**, is similar to Inspissated Ox-gall, except that it is purified by the separation of albuminous matter.

Dose, 5 to 10 grains in form of pill.

**FERMENTUM**—*Yeast*.—The microscopic plant *Torula cerevisiæ*, which causes fermentation. Antiseptic, stimulant. Used in typhoid conditions, diabetes, etc. Also as an antiseptic poultice for ulcers, etc.

Dose,  $\frac{1}{2}$  to 1 fl.ounce.

**FERRUM—Iron.**—(Fe ; 55.9). The most abundant and most useful metal. (See page 222.) The Salts of Iron are tonic, alterative, nearly all astringent, and vary somewhat in general properties and uses according to the substances with which the metal is combined. They are used generally to give tone to the system, to reoxygenize impoverished blood, and for general debilitated conditions; also used as astringents. The doses of the ordinary Iron Salts are from 2 to 20 grains. Smaller doses being usually as valuable as large ones, because only a small amount of the Iron preparation is taken up in the system. The doses of the solutions are from 2 to 20 minims, usually largely diluted.

As most of the Iron Salts and preparations are described in Part III., and as they all have similar properties and uses, it is unnecessary to repeat them here.

The following is a list of doses of the iron preparations most commonly used :

### Iron Salts.

Dose.	Dose.
Carbonate, . . . . . 2 to 5 grs.	Iodide saccharated, . . 2 to 10 grs.
“ saccharated, 5 to 20 grs.	Lactate, . . . . . 2 to 10 grs.
“ mass of, . . 3 to 10 grs.	Magnetic oxide, . . . 3 to 10 grs.
Citrate, . . . . . 3 to 10 grs.	Phosphate, . . . . . 2 to 5 grs.
“ ammoniated, . 3 to 10 grs.	Pyrophosphate, . . . 2 to 5 grs.
“ and quinine, . 2 to 5 grs.	Reduced, . . . . . 2 to 5 grs.
“ “ “ strychn., 2 to 5 grs.	Sulphate, . . . . . 3 to 10 grs.
“ “ strychnine, 2 to 5 grs.	“ dried, . . . . . 1 to 2 grs.
Ferrocyanide, . . . . 2 to 5 grs.	“ precipitated, . 2 to 4 grs.
Hypophosphite, . . . 3 to 10 grs.	Tartrate, . . . . . 2 to 5 grs.
Iodide (in pills), . . . 1 to 5 grs.	Valerianate, . . . . . 1 to 3 grs.

### Mixtures.

Dose.	Dose.
Basham's, . . . . 1 to 4 fl.drachms.	Griffith's, . . . . ½ to 2 fl.drachms.

### Solutions.

Dose.	Dose.
Acetate, . . . . . 2 to 10 minims.	Dialysed, . . . . . 5 to 20 minims.
Chloride, . . . . . 1 to 5 minims.	Nitrate, . . . . . 2 to 10 minims.
Citrate, . . . . . 5 to 20 minims.	Subsulphate, . . . . 2 to 10 minims.
“ and quinine, 5 to 20 minims.	

### Syrups.

Dose.	Dose.
Bromide, . . . . . 15 to 30 minims.	Lactophosphate, . . 1 to 2 fl.drms.
Chloride (ferrous), 10 to 30 minims.	Phosphate, . . . . . 1 to 2 fl.drms.
Hypophosphite, . . 1 to 2 fl.drms.	“ I.Q. & S. ½ to 1 fl.drms.
Iodide, . . . . . 15 to 60 minims.	Pyrophosphate, . . 1 to 2 fl.drms.

### Tinctures.

Dose.	Dose.
Acetate, . . . . . 3 to 30 min.	Ferri Pomata, . . . 15 to 30 min
Chloride or Muriate, 5 to 20 min.	

### Wines.

Dose.	Dose.
Wine of Iron, . . . . 1 to 4 fl.ozs.	Wine of Citrate, . . 1 to 4 fl.drms.
“ Bitter, . . . . . 1 to 2 fl.drms.	

**FILIX MAS—Male Fern.**—See *Aspidium*.



**FÆNICULUM**—Fennel.—The fruit (seed) of *Feniculum vulgare*. Stomachic, stimulant, carminative. Used for colic and flatulence and as an aromatic addition to other medicines.

Dose of powder, 15 to 30 grains; of fluid extract, 15 to 20 minims; of oil, 2 to 10 minims; of spirit (1:8), 15 to 30 minims; of water,  $\frac{1}{2}$  to 2 fl.ounces.

**FRANGULA**—Buckthorn.—The bark of *Rhamnus Frangula*. Laxative or purgative, according to dose.

Dose of powder,  $\frac{1}{2}$  to 2 drachms; of decoction (1:8),  $\frac{1}{2}$  to 2 fluid-ounces; of extract, 3 to 10 grains; of fluid extract,  $\frac{1}{2}$  to 2 fl.drachms.

**FRANKENIA**—Yerba Reuma.—The plant *Frankenia grandiflora*. Mild astringent. Used in catarrh and other mucous discharges.

Dose of powder, 10 to 20 grains; of fluid extract, 10 to 20 minims; of green plant fluid extract, 5 to 15 minims.

**FRANCISCA UNIFLORA**—Manaca.—The root. Emmenagogue, diuretic, purgative. In rheumatism and syphilis.

Dose of powder, 5 to 40 grains; of fluid extract, 5 to 40 minims.

**FRASERA**—American Columbo.—The root of *Frasera Walteri*. Bitter tonic. Used to increase the appetite, etc.

Dose of powder, 20 to 60 grains; of fluid extract, 20 to 60 minims.

**FRAXINUS AMERICANA**—White Ash.—The bark. Tonic, cathartic. Used for constipation and dropsy.

Dose of powder, 5 to 15 grains; of fluid extract, 5 to 15 minims.

**FRAXINUS SAMBUCIFOLIA**—Black Ash.—The bark. Tonic, astringent, in large doses cathartic. Used externally for salt-rheum and skin diseases.

Dose of powder, 1 to 2 drachms; of fluid extract, 1 to 2 fl.drachms.

**FUCUS VESICULOSUS**—Sea-wrack, Bladder-wrack.—The whole plant. Mucilaginous. Has been recommended for reducing obesity.

Dose of decoction (1:16), 4 to 8 fl.ounces; of fluid extract, 1 to 2 fl.drachms.

**FUMARIA**—Fumatory.—The leaves of *Fumaria officinalis*. Alterative, tonic, laxative. In liver complaints, scrofula and skin diseases.

Dose of powder, 30 to 60 grains; of fluid extract, 30 to 60 minims.

**GALANGA**—GALANGAL.—The rhizome of *Alpina officinarum*. Warm stimulant, similar to ginger. This remedy has had considerable popularity, under the name of East India Catarrh Root, as a snuff for catarrh, and colds. The powder may be used as a snuff.

Dose of powder, 5 to 20 grains; of fluid extract, 5 to 20 minims.

**GALBANUM**—The gum-resin of *Ferula galbaniflua*. Stimulant. Used in chronic bronchitis, catarrh, etc.; also used externally in plasters, combined with other gums.

Dose of powder, 5 to 15 grains, in form of pill; of compound galbanum pills, 2 to 3.

**GALIUM APARINE**—Cleavers, Goosegrass.—The herb. Cooling, diuretic, antiscorbutic. Used in dropsy, urinary troubles, skin diseases, etc.

Dose of powder, 1 to 2 drachms; of fluid extract, 1 to 2 fl.drachms.

**GALIUM VERUM**—Lady's Bedstraw.—The herb. Properties and uses similar to above.

Dose of powder, 1 to 2 drachms; of fluid extract, 1 to 2 fl.drachms.



**GALLA**—Nuttall.—Excrescences formed by the puncture of an insect on *Quercus lusitanica*. A powerful astringent, containing from 40 to 75 per cent. of tannin, and from 2 to 3 per cent. of gallic acid. Used internally for diarrhœa and relaxed conditions, and externally as an astringent, wash or application; also in ointment for hemorrhoids, etc.

Dose of powder, 5 to 15 grains; of fluid extract, 5 to 30 minims; of infusion (1:10), 1 to 3 fl.drachms; of tincture,  $\frac{1}{2}$  to 2 fl.drachms.

**GARRYA FREMONTII**—Quinine Bush.—The leaves, etc. Antiperiodic, astringent. Properties similar to Quinine. Used in malaria, diarrhœa, etc.

Dose of powder, 10 to 30 grains; of fluid extract, 10 to 30 minims.

**GAULTHERIA**—Wintergreen. Chickerberry, Teaberry.—The leaves of *Gaultheria procumbens*. Stimulant and mild astringent.

Dose of powder, 30 to 120 grains; of fluid extract,  $\frac{1}{2}$  to 2 fl.drachms; of oil, 3 to 10 minims; of spirit,  $\frac{1}{2}$  to 1 fl.drachm.

**GELATINA**—Gelatin.—The colloid portion of animal matter, prepared from bones, cartilage, skin, etc. It is largely used for making jellies and other articles of food, and in medicine for making capsules, gelatin coating pills, making gelatin suppositories, etc. It is simply purified glue.

**GELSEMIUM**—Yellow Jasmine.—The rhizome and rootlets of *Gelsemium sempervirens*. Sedative, promptly reduces the force and frequency of the pulse. It is used in fevers, neuralgia, inflammatory diseases, etc.

Dose of powder, 3 to 10 grains; of extract,  $\frac{1}{4}$  to 1 grain; of fluid extract, 2 to 8 minims; of green plant fluid extract, 1 to 5 minims; of tincture, 10 to 30 minims.

**GENTIANA**—Gentian.—The root of *Gentiana lutea*. Bitter tonic. It is very generally used as an appetizer, and for dyspepsia and indigestion.

Dose of powder, 5 to 30 grains; of extract, 2 to 10 grains; of fluid extract, 10 to 60 minims; of compound fluid extract, 10 to 60 minims; of compound infusion,  $\frac{1}{2}$  to 1 fl.ounce; of compound tincture,  $\frac{1}{2}$  to 2 fl.drachms.

**GENTIANA QUINGUEFLORA**—Five-Flowered Gentian.—The entire plant. Bitter tonic, similar to Gentian.

Dose of powder, 5 to 40 grains; of fluid extract, 5 to 40 minims.

**GERANIUM**—Cranesbill.—The root of *Geranium maculatum*, Strong astringent. Used in diarrhœa and relaxed conditions of the mucous membrane; also as a wash, injection, gargle, etc.

Dose of powder, 15 to 60 grains; of fluid extract, 15 to 60 minims; of infusion (1:16),  $\frac{1}{2}$  to 2 fluidounces.

**GEUM RIVALE**—Water Avens.—The root. Astringent, tonic. Used in diarrhœa and relaxed conditions of the mucous membrane.

Dose of powder, 15 to 30 grains; of fluid extract, 15 to 30 minims.

**GEUM URBANUM**—European Avens.—The root. Properties, uses and doses similar to *Geum rivale*.

**GILLENIA STIPULACEA**—American Ipecac.—The root. Emetic, diaphoretic, expectorant. Used in dyspepsia, dropsy, coughs, etc.

Dose of powder, 5 to 15 grains; of fluid extract, 5 to 15 minims.

**GILLENIA TRIFOLIATA**—Indian Physic.—The root.

Emetic, diaphoretic, expectorant. Used in dyspepsia, and as a tonic in diseases of the internal organs; also as an expectorant.

Dose of powder, 5 to 15 grains; of fluid extract, 5 to 15 minims.

**GLYCERINUM**—**Glycerin**.—"A liquid obtained by the decomposition of fats and fixed oils and containing not less than 95 per cent. of absolute Glycerin," U. S. It is prepared by passing superheated steam through melted fats or fixed oils, contained in a distilling apparatus, which decomposes them into free acids and Glycerin, which separate in layers in the condenser. Glycerin is largely used externally and internally as a soothing application to irritated or abraded surfaces. It should, however, be diluted before being applied, on account of its great affinity for water.

Dose, 1 to 4 fl.drachms.

**GLYCERITA**—**Glycerites**.—(See page 225.) Medicines prepared with Glycerin as a vehicle; chiefly used externally.

**GLYCYRRHIZA**—**Liquorice**.—The root of *Glycyrrhiza glabra*. Demulcent, expectorant, etc. Used for coughs and colds, and as an addition to mask the taste of disagreeable medicines.

Dose of powder, 1 to 3 drachms or more; of compound powder 1 drachm; of fluid extract, 1 to 2 fl.drachms; of pure extract, 30 to 60 grains; of compound mixture (brown mixture), 2 to 4 fl.drachms.

**GLYCYRRHIZIN Ammoniatum**—*Ammoniated Glycyrrhizin*.—(See page 226.) An intensely sweet, scale preparation of liquorice used mainly for making vehicles for masking the taste of disagreeable medicines, and for mixing with quinine powders, etc., to cover their bitter taste.

**GNAPHALIUM**—**Life Everlasting**.—The flowering herb *Gnaphalium polycephalum*. Aromatic, tonic, astringent. Used in sore throat, pulmonary complaints, dyspepsia, etc.

Dose of powder, 15 to 60 grains; of fluid extract, 15 to 60 minims.

**GOSSYPIUM**—**Cotton**.—The fibre or hairs of the seeds of *Gossypium herbaceum*. Used in medicine as a dressing for burns, wounds, etc.

**Absorbent Cotton** is simply selected and purified cotton.

**Cotton Seed Oil** is expressed from Cotton Seed, and has largely taken the place of Olive Oil in medicine. Its commercial name is "Union Salad Oil."

**GOSSYPII RADICIS CORTEX**—**Cotton Root Bark**.—The bark of the root of *Gossypium herbaceum*. Uterine contracter, similar to Ergot. It is used for suppression or scanty menstrual secretion; also for producing abortion.

Dose of powder, 30 to 75 grains; of extract, 1 to 5 grains; of fluid extract, 30 to 75 minims; of green plant fluid extract, 20 to 60 minims; of wine, 1 to 4 fl.drachms.

**GOUANIA DOMENGENSIS**—**Chewstick**.—The stems. Used as a tonic in dyspepsia and pulmonary complaints; also for tooth powders.

Dose of powder,  $\frac{1}{2}$  to 1 drachm; of fluid extract,  $\frac{1}{2}$  to 1 fl.drachm.

**GRANATUM**—**Pomegranate**.—The bark of the root or the rind of the fruit of *Punica Granatum*. The bark is used chiefly for expelling tape-worm, and the rind as an astringent in diarrhoea and relaxed conditions of the mucous membrane.

Dose of powdered bark, 30 to 120 grains; of decoction of bark (1:8), 2

to 4 fl.ounces; of fluid extract of bark, 30 to 120 minims; of powdered fruit-rind, 15 to 30 grains; of fluid extract, 15 to 30 minims.

**GRATIOLA**—Hedge Hyssop.—The herb *Gratiola officinalis*. Drastic cathartic, diuretic, and emetic. Used in liver and kidney diseases.

Dose of powder, 15 to 40 grains; of fluid extract, 15 to 40 minims.

**GRINDELIA**.—The leaves and flowering-tops of *Grindelia robusta* or *Grindelia squarrosa*. The properties of both species are similar and they are both used for asthma, bronchitis, etc., and as a diuretic and stimulant in diseases of the kidneys and bladder.

Dose of powder 15 to 75 grains; of extract, 2 to 10 grains; of fluid extract, 15 to 75 minims; of green plant fluid extract, 10 to 60 minims.

**GUACO**.—The leaves of *Mikania Guaco*. Stimulant, bitter tonic, diuretic, etc. Used in rheumatism, fever and cholera.

Dose of powder, 30 to 60 grains; of fluid extract, 30 to 60 minims.

**GUAIAECUM**—Guaiac.—The wood (*lignum*) or resin (*resina*) of *Guaiacum officinale*. Diuretic, diaphoretic, alterative, stimulant. Used in blood disorders, rheumatism, etc.

Dose of powdered wood, 30 to 75 grains; of fluid extract of wood, 30 to 75 minims; of resin, 5 to 15 grains; of mixture  $\frac{1}{2}$  to 1 fl.ounce; of tincture, 20 to 60 minims; of tincture, ammoniated, 20 to 60 minims.

**GUARANA**.—A Brazilian drug, prepared from the seeds of *Paulinia sorbilis* by crushing them, beating to a pulp with water and then drying.

Properties similar to tea and coffee. Nerve stimulant, etc. It is given in sick headache and other nervous troubles.

Dose of powder, 15 to 80 grains; of fluid extract, 15 to 80 minims; of elixir (1:4), 1 to 4 fl.drachms.

**GUTTA-PERCHA**.—The dried, milky juice, from the trunks of the trees *Isonandra gutta*. Used largely in the manufacture of plasters; also used in Collodion. Never used internally.

**GYNOCARDIÆ OLEUM**—Chaulmoogra Oil.—A fixed oil, obtained by expression from the seeds of *Gynocardia odorata*. A new drug recommended for scrofula, syphilis, leprosy, etc. It is taken in doses of 2 to 5 minims; and used externally usually made into an ointment with 5 parts of petrolatum.

**HÆMATOXYLON**—Logwood.—The heart-wood of *Hæmatoxylon campechianum*. Astringent and tonic. Used in relaxed conditions of the mucous membrane.

Dose of decoction (1870), 1 to 2 fl.ounces; of extract, 5 to 10 grains; of fluid extract, 30 to 80 minims.

Logwood is also largely used in coloring, making ink, etc.

**HAMAMELIS**—Witch-Hazel.—The leaves or bark of *Hamelis Virginica*. The leaves only are officinal. Astringent and tonic. Used in congestion and inflammation, hemorrhages, etc.; and externally, as a lotion.

Dose of bark, 30 to 60 grains; of fluid extract of bark, 30 to 60 minims; of leaves, 30 to 120 grains; of fluid extract of leaves,  $\frac{1}{2}$  to 2 fl.drachms; of distilled extract of leaves, 1 to 4 fl.drachms.

**HEDEOMA**—Pennyroyal.—The leaves and flowering tops of *Hedeoma pulegioides*. Aromatic, carminative, stimulant. Used in colic and suppressed menses.

Dose of powder, 1 to 2 drachms; of fluid extract,  $\frac{1}{2}$  to 2 fl.drachms;

of infusion (1:10), 2 to 4 fl.ounces; of oil, 2 to 5 minims; of spirits (1:16),  $\frac{1}{2}$  to 1 fl.drachm.

**HELIANTHEMUM**—Frostwort, Rockrose.—The whole herb *Helianthemum Canadense*. Bitter tonic, astringent, alterative. Used for diarrhœa, scrofula, etc.

Dose of powder, 1 to 2 drachms; of fluid extract, 1 to 2 fl.drachms.

**HELIANTHUS**—Sunflower.—The seed of *Helianthus annuus*. Diuretic, expectorant. Used for asthma, lung diseases, and heaves of horses.

Dose of powder, 1 to 3 drachms; of fluid extract, 1 to 3 fl.drachms.

**HELLEBORUS**—Black Hellebore.—The rhizome and rootlets of *Helleborus niger*. Cathartic, emetic, emmenagogue.

Dose of powder, 1 to 6 grains; of fluid extract, 1 to 6 minims.

**HELONIAS**—False Unicorn.—The root of *Chamaelirium luteum*. Tonic. Used in colic, and as a uterine tonic.

Dose of powder, 15 to 60 grains; of fluid extract, 15 to 60 minims; of green plant fluid extract, 10 to 40 minims.

**HEMIDESMUS**—Indian Sarsaparilla.—The root of *Hemidesmus Indicus*. Alterative tonic, diaphoretic, diuretic.

Dose of powder, 30 to 60 grains; of fluid extract, 30 to 60 minims.

**HEPATICA**—Liverwort.—The leaves of *Hepatica triloba*. Used for diseases of the liver and kidneys; also for chronic bronchitis.

Dose of powder, 30 to 60 grains; of fluid extract, 30 to 60 minims; of infusion (1:10), 1 to 4 fl.ounces.

**HERACLEUM**—Masterwort, Cow Parsnip.—The root of *Heracleum lanatum*. Stimulant, antispasmodic, carminative. In epilepsy, dyspepsia, etc.

Dose of powder, 30 to 75 grains; of fluid extract, 30 to 75 minims.

**HEUCHERA**—Alum Root.—The root of *Heuchera Americana*. Astringent. Used in dysentery and hemorrhages, and as an astringent gargle and wash.

Dose of powder, 30 to 90 grains; of fluid extract, 30 to 90 minims; of infusion (1:10),  $\frac{1}{2}$  to 4 fl.ounces.

**HIBISCUS ABELMOSCHUS**—Ambrette or Amber Seed.—Stimulant, antispasmodic; also used in perfumes.

Dose of powder, 30 to 60 grains; of fluid extract, 30 to 60 minims.

**HIPPOCASTANUM**—Horsechestnut.—The bark of *Æsculus hippocastanum*. Bitter tonic, antiperiodic. Used for intermittent fevers, malaria, and neuralgia.

Dose of powder, 1 to 2 drachms; of fluid extract, 1 to 2 fl.drachms.

**HIRUDO**—Leech.—The Swedish or Hungarian leeches are considered best. Used for drawing blood from congested or engorged tissues.

**HORDEUM**—Barley.—Several preparations of barley are used in medicine for various purposes.

**Hordeum Decorticatum**.—*Pearl Barley* is used mainly as food for invalids.

**Maltum**.—*Malt*, which is prepared from barley, is used in medicine in the form of an extract, and also very largely for making malt liquors.

**HUMULUS**—Hops.—The strobiles (flowers) of *Humulus lupulus*. Bitter tonic, nervine. Used as a general tonic, and particularly for stomach troubles; also as a nervine and anodyne.

Dose of powder, 15 to 75 grains; of extract, 3 to 5 grains; of fluid extract, 15 to 75 minims; of infusion (1870), 1 to 4 fl.ounces; of tincture, 1 to 2 fl.drachms.

**HYDRANGIA—Seven Barks.**—The root of *Hydrangia arborescens*. It is used in diseases of the kidneys and bladder, especially for gravel or calcarious deposits.

Dose of powder, 30 to 75 grains; of fluid extract, 30 to 75 minims; of infusion (1:10), 1 to 2 fl.ounces.

**HYDRARGYRUM—Mercury, Quicksilver.**—(Hg; 199.7.) A fluid metal obtained from its sulphide, the ore *Cinnabar*. Its salts are among the first chemicals prepared, and they have been extensively used in medicine since the art was first originated. They are alterative, stimulant to the glandular system, and each combination has some special application. The preparations which are made from mercury, and given or used in medicine, are as follows:

**Mercury Mass.**—*Blue pill, Blue mass.*—(See page 247.) Used as a cathartic, and to act on the liver.

Dose, 3 to 15 grains.

**Mercury with Chalk.**—(*Hydrargyrum Cum Creta*.) Made by triturating together Mercury, Sugar of Milk, Chalk, etc., until the Mercury is extinguished. Used in diarrhœa of children, with acid discharges.

Dose,  $\frac{1}{2}$  to 10 grains.

**Mercury Ointment.**—*Blue Ointment.*—(See *Unguentum Hydrargyri*.) Used externally as an absorbent for swellings, etc.; also to destroy parasites.

**Mercury Plaster.**—(See page 94.) Used for glandular swellings, enlarged spleen or liver, etc.

The salts of Mercury used in medicine are as follows:

**HYDRARGYRUM AMMONIATUM — Ammoniated Mercury, White Precipitate.**—Made by precipitating a solution of Bichloride of Mercury, with Water of Ammonia. Only used externally in ointment for skin diseases and ophthalmia.

**HYDRARGYRI CHLORIDUM CORROSIVUM—Corrosive Sublimate.**—*Bichloride of Mercury*. Made by subliming together Mercury, Chloride of Sodium and Black Oxide of Manganese, and collecting the vapors in a condenser. Corrosive poison. Used in minute doses in syphilis, and as an alterative.

Dose of powder,  $\frac{1}{20}$  to  $\frac{1}{10}$  grain.

Antidote in poisoning, Albumen.

*Bed Bug Poison.*—Two ounces of this salt dissolved in a pint of Alcohol makes the best Bed Bug Poison.

**HYDRARGYRI CHLORIDUM MITE—Calomel.**—Prepared by sublimation. The most used of the mercurial salts. Used as an alterative and purgative in fevers and all inflammatory action. It is one of the chief ingredients of Compound Cathartic Pills.

Dose, from  $\frac{1}{10}$  to 10 grains.

Calomel is also used as an application to sores and ulcers, and in ointments.

**Lotio Nigra.**—*Black Wash*. Is made by triturating 30 grains of Calomel with 10 ounces of Lime Water. It is improved by adding 30 grains of powdered Acacia.



**HYDRARGYRI CYANIDUM**—Cyanide of Mercury.—A very poisonous salt of mercury. Used in syphilis.

Dose,  $\frac{1}{20}$  to  $\frac{1}{4}$  grain.

**HYDRARGYRI IODIDUM RUBRUM**—Red Iodide of Mercury, Biniiodide of Mercury.—Made by dissolving nine parts of Corrosive Sublimate and eleven parts of Iodide of Potassium, each in sufficient Distilled Water, filtering the solutions and mixing them, when the Red Iodide of Mercury is precipitated. The precipitate is then washed and dried. Used as an alterative, and also externally in the form of ointment in syphilis.

Dose,  $\frac{1}{16}$  grain.

**HYDRARGYRI IODIDUM VIRIDE**—Protiodide of Mercury.—Prepared from Iodine and Metallic Mercury. Properties similar to Biniiodide of Mercury, but milder.

Dose,  $\frac{1}{8}$  to 1 grain.

**HYDRARGYRI NITRATIS LIQUOR**—Solution of Nitrate of Mercury.—(See page 238.) A powerful caustic and escharotic. Used in syphilitic growths, chancres, cancers, ulcers, etc.

*Ointment of Nitrate of Mercury* is much used in skin diseases, indolent sores, ulcers, etc.

**HYDRARGYRI OXIDUM FLAVUM**—Yellow Oxide of Mercury.—Made by dissolving 1 part of corrosive sublimate in 20 parts of warm, distilled water, filtering the solution and pouring it into 9 parts of Solution of Potassa, and then washing and drying the precipitate. Used in the form of ointment and oleate, as a stimulant application to ulcers, sores, granular lids, etc.

**HYDRARGYRI OXIDUM RUBRUM**—Red Oxide of Mercury, "Red Precipitate."—Made by gently heating 6 parts of Mercury with 4 parts of Nitric Acid, and 5 parts of Water, until the Mercury is dissolved, and then evaporating to dryness. Used mainly in the form of ointment, which is a popular remedy for itch. (See *Unguentum Hydrargyri Oxidi Rubri*.)

**HYDRARGYRI SUBSULPHAS FLAVUS**—Yellow Subsulphate of Mercury, Turpeth Mineral.—Made by dissolving 10 parts of Mercury in 5 parts of Sulphuric Acid, 4 parts of Nitric Acid, and Water; then evaporating to dryness; purifying by boiling in Water; washing and drying. Emetic, irritant; but little used at present.

Dose, 2 to 5 grains.

**HYDRARGYRI SULPHAS**—Sulphate of Mercury.—Prepared by heating 10 ounces av. of Mercury with 6 fl.ounces (Imperial Measure) of Sulphuric Acid, and evaporating with constant stirring to dryness.

Sulphate of Mercury is used for preparing other salts of mercury and in solution, as a battery fluid.

**HYDRARGYRI SULPHIDUM NIGRUM**—Ethiops Mineral.—Made by triturating together equal parts of Mercury and Sulphur, until all globules of Mercury have disappeared. This was formerly a favorite preparation of Mercury, but is now little used.

**HYDRARGYRI SULPHIDUM RUBRUM**—Red Sulphuret of Mercury, Cinnabar.—Made by heating together 5 parts of Mercury with 1 of Sulphur, and afterwards subliming. It is employed in medicine for fumigation.

When properly prepared by levigation it is called Vermilion, being used largely for painting.

Fine red Sealing Wax is colored with Cinnabar.

**HYDRASTIS**—Golden Seal, Yellow Puccoon.—The rhizome and rootlets of *Hydrastis Canadensis*. Bitter tonic, stomachic. It acts especially as a tonic to the mucous membrane.

Dose of powder, 5 to 30 grains; of extract, 1 to 5 grains; of fluid extract, 5 to 30 minims; of fluid hydrastis, or aqueous fluid extract, 5 to 30 minims; of tincture,  $\frac{1}{2}$  to 2 fl.drachms.

The chief constituents of Hydrastis are *berberine*, *hydrastine* and *xanthopuccine*.

**Hydrastine**.—An alkaloid from Hydrastis. The alkaloid and its salts are used for the same purposes as the drug.

Dose, 1 to 5 grains.

**HYOSCYAMUS**—Henbane.—The leaves, root or seed of *Hyoscyamus niger*. The leaves of the second year's growth only are official. Anodyne, narcotic, hypnotic. Used for neuralgia, palpitation of the heart, sleeplessness, etc.

Dose of powdered leaves, 5 to 30 grains; of abstract of leaves, 1 to 3 grains; of extract of leaves (1870), 1 to 2 grains; of alcoholic extract of leaves (1880), 1 to 2 grains; of fluid extract of leaves, 5 to 30 minims; of juice,  $\frac{1}{2}$  to 1 fl.drachm; of tincture of leaves, 15 to 120 minims.

Dose of powdered root, 5 to 10 grains; of fluid extract of root, 5 to 10 minims.

Dose of powdered seed, 2 to 10 grains; of fluid extract of seed, 2 to 10 minims.

**Hyoscyamine**.—An alkaloid from Hyoscyamus is the chief active constituent of the drug.

**Hyoscyaminæ Sulphas**, a salt of the above alkaloid; is officinal, and is used for the same purposes as the drug.

Dose,  $\frac{1}{80}$  to  $\frac{1}{20}$  grain.

**HYPERICUM**—Saint John's Wort, Johnswort.—The leaves and flowering tops of *Hypericum perforatum*. Nervine, antispasmodic, astringent. Used for hysteria, fevers, dysentery, etc.

Dose of powder, 1 to 2 drachms; of fluid extract, 1 to 2 fl.drachms.

**HYSSOPUS**—Hyssop.—The flowering plant *Hyssopus officinalis*. Stimulant, carminative, sudorific. Used in fevers, for catarrh, etc.

Dose of powder, 30 to 60 grains; of fluid extract, 30 to 60 minims.

**ICHTHYOCOLLA**—Isinglass.—The inner membrane of the swimming-bladder of *Acipenser huso*, and other fish.

Russian Isinglass is most esteemed, but is quite expensive; ordinary varieties are in thin flat sheets. Gelatine is frequently sold under the name of Isinglass. Isinglass is used for making court plaster, and is an ingredient in many cements and other adhesive compounds.

**IGNATIA**.—The seeds of *Strychnos ignatii*. Properties similar to nux-vomica, but it contains a much larger quantity of alkaloids. *Strychnine* and *brucine* are chiefly prepared from Ignatia; it contains from  $\frac{1}{2}$  to 1  $\frac{1}{2}$  per cent. of each.

Dose of powder, 1 to 2 grains; of abstract,  $\frac{1}{2}$  to 1 grain; of extract,  $\frac{1}{8}$  to  $\frac{1}{2}$  grain; of fluid extract, 1 to 2 minims; of tincture, 10 to 40 minims.



**ILEX PARAGUAYENSIS**—*Mate, Paraguay Tea*.—The leaves. Properties similar to tea and coffee. Assists digestion.

Dose of powder, 30 to 60 grains; of fluid extract, 30 to 60 minims.

**ILLICIUM**—*Star Anise*.—The fruit (seed) of *Illicium anisatum*. Properties and uses similar to Anise. It is stimulant, carminative, and stomachic, and makes a grateful addition to cough or soothing cordials.

Dose of powder, 10 to 30 grains; of fluid extract, 10 to 30 minims; of oil, 1 to 3 minims.

**IMPERATORIA**—*Masterwort*.—The rhizome of *Imperatoria ostruthium*. Stimulant, sialagogue. Used in colic, dyspepsia, flatulence, etc.

Dose of powder, 15 to 30 grains; of fluid extract, 15 to 30 minims; of infusion (1:10),  $\frac{1}{2}$  to 2 fl.ounces.

**INDIGO**.—A blue lake or coloring matter prepared by the fermentation of the juices of certain plants. It is seldom used in medicine.

**Sulphate of Indigo**, or *Chemic Blue*, is prepared by dissolving 2 ounces of Indigo, in fine powder, in 1 pound av. of Sulphuric Acid.

**INFUSA**—*Infusions*.—(See page 227.) Preparations made by steeping drugs in hot water, usually for half an hour. The general official standard of strength for infusions is now 1 part of the drug to make 10 of the infusion.

**INHALATIONS**.—Volatile medicines which are used by inhaling their vapor. They may be used by “snuffing” from a bottle, or by means of some suitable inhaler or atomizer.

**INJECTIONS**.—Medicines introduced by the aid of a syringe into the various passages or cavities of the system. Those used by the rectum are called enemas.

**Hypodermic Injections** are those introduced by means of a very small syringe under the skin.

**INULA**—*Elecampane*.—The root of *Inula Helenium*. Stimulant, tonic. Used in dyspepsia, pulmonary diseases, etc.

Dose of powder, 15 to 60 grains; of fluid extract, 15 to 60 minims; of infusion (1:10),  $\frac{1}{2}$  to 2 fl.ounces.

**ODOFORMUM**—*Iodoform*.—A lemon-colored salt prepared by the decomposition of Carbonate of Potassium, Iodine, and Alcohol. Mainly used externally as an absorbent and antiseptic for wounds, ulcers, gangrene, etc. It may be applied by dusting on the affected part, or in the form of ointment or solution.

Dose, for internal use, 1 to 3 grains, in pills.

**IODUM**—*Iodine*.—(I; 126.6.) An acrid, volatile, non-metallic element, obtained chiefly from the ashes of sea-weeds. Alterative, absorbent, discutient. Used in scrofula, enlarged glands, syphilis, etc. It is given internally in the form of Iodide of Starch, and its various salts; and used externally in the form of solutions, tincture, ointments, etc.

**IPECACUANHA**—*Ipecac*.—The root of *Cephalis Ipecacuanha*. Expectorant, emetic, diaphoretic. In coughs, pulmonary affections, fevers, etc.

Dose of powder, as expectorant, 1 to 2 grains; as an emetic, 15 to 30 grains; of compound (Dover's) powder, 3 to 10 grains; of fluid extract, 2 to 30 minims; of syrup, 20 to 60 minims; of wine, 5 to 30 minims.

**IRIS FLORENTINA**—**Orris Root**.—The rhizome. Seldom used as medicine, but largely employed as an ingredient in tooth, face, and sachet powders and perfumes. Its odor resembles violets.

**IRIS VERSICOLOR**—**Blue Flag**.—The rhizome. Cholagogue, sialagogue, diuretic, alterative; when fresh, cathartic and emetic. Used for diseases of the liver and kidneys, and in scrofula.

Dose of powder, 5 to 20 grains; of extract,  $\frac{1}{4}$  to 1 grain; of fluid extract, 10 to 60 minims; of green plant fluid extract, 5 to 20 minims.

**JACARANDA CAROBA**—**Caroba**.—The leaves. Alterative, diuretic, diaphoretic, tonic. In secondary syphilis and other diseases of the urinary organs.

Dose of powder, 30 to 60 grains; of fluid extract, 30 to 60 minims.

**JALAPA**—**Jalap**.—The tuberous root of *Exogonium purga*. A powerful hydragogue cathartic.

Dose of powder, 5 to 20 grains; of compound powder, 10 to 30 grains; of abstract, 3 to 15 grains; of alcoholic extract, 2 to 8 grains; of fluid extract, 5 to 20 minims; of resin, 2 to 5 grains.

**JEFFERSONIA DIPHYLLO**—**Twin Leaf**.—Diuretic, alterative, antispasmodic. Used in rheumatism, dropsy, etc.

Dose of powder, 30 to 60 grains; of fluid extract, 30 to 60 minims.

**JUGLANS**—**Butternut**.—The inner bark of the root, or the leaves of *Juglans cinerea*. Mild cathartic. Used chiefly for constipation.

Dose of powdered bark or leaves, 1 to 2 drachms; of extract of bark, 5 to 30 grains; of fluid extract, 1 to 2 fl.drachms; of green plant fluid extract, 40 to 75 minims.

**JUGLANS NIGRA**—**Black Walnut**.—The bark of the root, or the leaves. Alterative and vermifuge.

Dose of powder, 30 to 60 grains; of fluid extract, 30 to 60 minims.

**JUGLANS REGIA**—**European Butternut**.—The leaves. Alterative and vermifuge. The juice of the fruit cover is used for dyeing hair brown.

Dose of powder, 30 to 60 grains; of fluid extract, 30 to 60 minims.

**JUNIPERUS**—**Juniper**.—The ripe fruit of *Juniperus communis*. Stimulant, diuretic, emmenagogue. Used in kidney and urinary diseases.

Dose of fluid extract, 30 to 60 minims; of infusion (1870), 1 to 2 fl. ounces; of oil, 5 to 10 minims; of spirit, 30 to 60 minims; of compound spirit, 2 to 4 fl.drachms.

**JUNIPERUS VIRGINIANA**—**Red Cedar**.—The oils of Red and White Cedar are frequently used in liniments, and the young twigs are used in the form of an infusion as a stimulant in menstrual obstructions.

**KALMIA**—**Mountain Laurel**, **Calico Bush**, **Sheep Laurel**.—The leaves of *Kalmia latifolia*. Sedative, astringent, alterative. Used in inflammations and fevers, hemorrhages, etc.

Dose of powder, 5 to 15 grains; of fluid extract, 5 to 15 minims.

**KAMALA**—**Kameela**.—The glands and hairs of the capsules of *Rottlera* or *Mallotus philippinensis*. Used for removing tape-worm.

Dose, 1 to 2 drachms; of fluid extract, 1 to 2 fl.drachms.

**KAVA**—**Ava Kava**.—(See *Methisticum*).

**KINO**.—The inspissated juice of *Pterocarpus marsupium*. Astringent. Used in diarrhoea and hemorrhage.

Dose of powder, 10 to 20 grains; of fluid or liquid extract, 20 to 40 minims; of tincture,  $\frac{1}{2}$  to 2 fl.drachms.

**KRAMERIA**—Rhatany.—The root of *Krameria triandra*. Strong astringent. Used for diarrhœa, hemorrhage, and generally in relaxed conditions.

Dose of powder, 20 to 40 grains; of extract, 3 to 15 grains; of fluid extract, 20 to 60 minims; of infusion (1870),  $\frac{1}{2}$  to 2 fl.ounces; of syrup,  $\frac{1}{2}$  to 4 fl.drachms; of tincture,  $\frac{1}{2}$  to 2 fl.drachms; of troches, 1 or more.

**LACCA RESINA**—Shellac.—A resin obtained from a variety of East India trees, and which is caused by the puncture of the insect *Coccus lacca*. Shellac is used largely in the arts.

**LACTUCA**—Wild Lettuce.—The flowering herb *Lactuca virosa*. Mild anodyne and soporific.

Dose of powder, 15 to 60 grains; of extract, 2 to 10 grains; of fluid extract, 15 to 60 minims.

**LACTUCARIUM**.—The milky juice of *Lactuca virosa*, concreted by evaporation. Anodyne, hypnotic, somewhat similar to opium, but less active. Used when opium is not desired, or is contra-indicated.

Dose of powder, 5 to 30 grains; of fluid extract, 2 to 20 minims; of syrup, 2 to 3 fl.drachms.

**LAPPA**—Burdock.—The root or seed of *Lappa officinalis*. Alterative, diuretic, slightly laxative. Used for syphilis, rheumatism, etc., and as a general blood purifier.

Dose of powdered seeds or root,  $\frac{1}{2}$  to 1 drachm; of fluid extract, 30 to 60 minims.

**LARIX AMERICANA** — American Larch, Tamarack.—The bark and gum. The bark is tonic, alterative, diuretic. Used in diseases of the liver, rheumatism, dropsy, etc. The gum is used as a balsamic cough tonic, and sometimes in plasters.

Dose of powdered bark,  $\frac{1}{2}$  to 1 drachm; of fluid extract, 30 to 60 minims.

A tincture of the gum may be made with Alcohol.

**LAUROCERASUS**—Cherry Laurel.—The fresh leaves of *Prunus laurocerasus*. Used mainly for making Cherry Laurel Water. The essential Oil of Cherry Laurel is also employed for this purpose.

Cherry Laurel Water is used for flavoring and as a mild sedative.

**LAURUS NOBILIS**—Laurel, or Bay Tree.—The leaves or berries. The leaves are stimulant, stomachic, slightly astringent, and are used to season soups, etc.; the berries are stimulant, stomachic. The expressed oil is used in stimulating ointments.

Dose of fluid extract of leaves or berries, 1 to 2 fl.drachms.

**LAVANDULA** — Lavender.—The flowers of *Lavandula vera*. Stimulant, carminative. Used mainly for flavoring, and as an addition to other medicines.

Dose of powder, 30 to 60 grains; of fluid extract, 30 to 60 minims; of oil, 3 to 5 drops; of spirit, 30 to 60 minims; of compound spirit (1870) or tincture (1880), 30 to 60 minims.

**LEDUM**—Marsh Tea, Labrador Tea, Wild Rosemary.—The small branches, tops and leaves of *Ledum palustre*. Gathered when the flowers are partly developed. Narcotic. Used for diarrhœa, rheumatism, and skin diseases; also externally to destroy parasites.

Dose of powder, 15 to 30 grains; of fluid extract, 15 to 30 minims; of infusion (1:10),  $\frac{1}{2}$  to 2 fl.ounces.

**LEONURUS** — Motherwort.—The flowering tops and leaves of

*Leonurus cardiaca*. Emmenagogue, nervine, antispasmodic. Used in female diseases.

Dose of powder, 30 to 60 grains; of fluid extract, 30 to 60 minims.

**LEPTANDRA**—**Culver's Root, Black Root**.—The rhizome and rootlets of *Leptandra Virginica*. Laxative, cholagogue, tonic. Used in diseases of the liver, diarrhoea, etc.

Dose of powder, 15 to 60 grains; of extract, 1 to 3 grains; of fluid extract, 15 to 60 grains; of green plant fluid extract, 10 to 30 minims.

**LEPTANDRIN** is a precipitated alcoholic extract of *Leptandra*, introduced by the Eclectics.

Dose, 1 to 3 grains.

**LEVISTICUM**—**Lovage**. The fruit (seed) and root of *Levisticum officinale*. Stimulant, carminative, stomachic. Used in dyspepsia, amenorrhoea, etc.

Dose of powdered root or seed, 10 to 60 grains; of fluid extract, 10 to 60 minims.

**LIATRIS ODORATISSIMA**—**Vanilla Plant, Deer Tongue**.—Aromatic stimulant. Used mainly as a flavoring for sachet powders, tobacco, etc., and also for flavoring medicinal compounds.

Dose of powder, 20 to 60 grains; of fluid extract, 20 to 60 minims.

**LIATRIS SPICATA**—**Button Snakeroot, Devil's Bit, Colic Root**.—Diuretic, tonic, emmenagogue, stimulant. Used in kidney diseases, gleet, etc.

Dose of powder, 1 to 2 drachms; of fluid extract, 1 to 2 fl.drachms.

**LIATRIS SQUARROSA**—**Blazing Star**.—Diuretic, tonic, emmenagogue, stimulant. Used in kidney diseases, etc.

Dose of powder, 1 to 2 drachms; of fluid extract, 1 to 2 fl.drachms.

**LIMON**—**Lemon**.—The fruit, or fruit rind, of *Citrus Limonum*. The fruit is acid, refrigerant, antiscorbutic. Used for making lemonade, a grateful drink; and also in fevers, diseases of the liver, etc. The rind contains the volatile oil which is so familiarly known as a flavoring ingredient.

**Lemon Juice** is made from the fruit, and is used for making lemonade, lemon syrup, etc.

**Lemon Oil** is employed for making extract, essence, or spirit of lemon, and for flavoring medicinal preparations.

**Lemon Syrup** is a grateful addition to many medicinal compounds.

**Lemon Spirit**, or **Essence**, or **Extract of Lemon**, is used chiefly for flavoring.

**LINDERA**—**Spicebush, Feverbush**.—The bark or fruit (berries) of *Benzoin odoriferum*. Aromatic, stimulant, and tonic.

Dose of powdered bark or berries, 30 to 60 grains; of fluid extract of bark or berries, 30 to 60 minims.

**LINIMENTA**—**Liniments**.—Preparations for external use, for swellings, lameness, pain, counter irritation, etc. (See page 229.)

**LINTEUM**—**Lint**.—Old linen which has been frequently washed, or the fibre of old linen obtained by scraping. Used as a dressing for wounds and sores.

**LINUM**—**Flaxseed, Linseed**.—The seed of *Linum usitatissimum*. Demulcent and emollient. An infusion of the seed is used in coughs, bronchitis, and other pulmonary diseases, and internal inflammation. A poultice of the ground seed is used for inflammatory swellings, ulcers

and sores. The oil is used in liniments, and internally for horse medicine, etc.

**Lini Farina.**—*Flaxseed Meal* is ground flaxseed, and is used chiefly for making poultices.

**Lini Infusum.**—*Infusion* of Flaxseed is made by steeping 1 part of Flaxseed with 16 parts of Water. Used as a drink in soreness of lungs, etc.

**Lini Oleum.**—*Linseed Oil* is made from the seeds, by expression. It is used in liniments, and internally; also for painting.

**LIPPIA MEXICANA.**—A Mexican herb. Used for catarrh and pulmonary affections.

Dose of powder, 5 to 10 grains; of fluid extract, 5 to 10 minims.

**LIQUIDAMBAR**—*Sweet Gum Tree.*—The bark and gum of *Liquidambar styraciflua*. Balsamic tonic. Used in bronchitis and discases of the bladder. The gum is used for the same purposes as Tolu, and externally in the form of a plaster.

Dose of bark, 1 to 2 drachms; of fluid extract of bark, 1 to 2 fl.-drachms; of tincture of gum, 10 to 30 minims.

**LIQUORES** — *Solutions.*—Soluble substances dissolved in some liquid, or in the form of a solution, making them more convenient for use or application. (See page 233).

**LIRIODENDRON**—*Whitewood, Tulip-tree.*—The bark of the young branches of *Liriodendron Tulipifera*. Bitter tonic, anthelmintic.

Dose of powder, 1 to 2 drachms; of fluid extract, 1 to 2 fl.drachms.

**LITHIUM.**—(Li; 7.) The lightest of all metals. The following Lithium Salts are all officinal, and all used as anthilithic, in urinary diseases, rheumatism, etc. :

**Benzoate of Lithium.**—This salt contains about 95 per cent. of Benzoic Acid. Dose, from 2 to 10 grains.

**Bromide of Lithium.**—Contains 92 or 93 per cent. of Bromine. Used in epilepsy, etc. Dose, 1 to 10 grains.

**Carbonate of Lithium.**—Properties similar to the other lithium salts, but less soluble. Dose, 1 to 6 grains.

**Citrate of Lithium.**—A very soluble salt of Lithium. Dose, 1 to 10 grains.

**Salicylate of Lithium.**—Contains about 90 per cent. of Salicylic Acid. Used mainly in rheumatism. Dose, 2 to 10 grains.

**LITMUS.**—A blue coloring matter prepared from various species of lichens. Used as a test for acids.

**Solution of Litmus** is made by macerating 1 part of Litmus in 8 parts of hot water, and then adding 2 ounces of alcohol.

**Blue Litmus Paper** is made by dipping white unsized paper into solution of Litmus, and then drying.

**Red Litmus Paper** is made by adding carefully, drop by drop, diluted hydrochloric acid to solution of Litmus, until it turns red, and then dipping unsized paper into it, and then drying.

**Neutral Test Paper** may be made by boiling 1 ounce of Litmus in 8 ounces of water for about half an hour, pouring in fresh water to make up the loss by evaporation, and then adding to one-half of the solution



hydrochloric acid, drop by drop, until it just turns red; then add to it the other half of the solution, and dip paper in it.

Paper thus treated will show the acid reaction by turning red, and the alkaline by turning blue.

**LOBELIA—Indian Tobacco.**—The herb and seed of *Lobelia inflata*. Emetic, expectorant, sialagogue, antispasmodic. Used in asthma, coughs, colds, etc., and as an emetic.

Dose of powdered herb or seed, as an expectorant,  $\frac{1}{2}$  to 2 grains; as an emetic, 5 to 20 grains; of fluid extract, the same in minims; of infusion (1:16), 10 minims to  $\frac{1}{2}$  fl.ounce; of tincture, 5 to 40 minims; of ethereal tincture, 10 to 30 minims; of green plant fluid extract, 1 to 10 minims; of vinegar, 10 to 60 minims.

**LOTIONES — Lotions.**—Preparations used for external application, and generally for washing or soaking the affected part.

**LYCOPERDON—Puff Ball.**—The entire fungus *Lycoperdon solidum*. The powder is used to check hemorrhage; and internally as a narcotic.

**LYCOPODIUM — Club Moss.**—The sporules of *Lycopodium clavatum*. Used internally as a diuretic and antispasmodic; externally, for dusting irritated surfaces to protect them. It is also used for dusting pills, and in theatres, for burning, to make flashes of lightning, etc.

Dose of powder, 10 to 30 grains; of ethereal tincture (1:10), 30 to 60 minims.

**LYCOPUS — Bugleweed, Sweet Bugle.**—The entire flowering plant *Lycopus Virginicus*. Sedative, tonic, astringent. Used in coughs, colds, and pulmonary diseases.

Dose of powder, 1 to 2 drachms; of fluid extract, 1 to 2 fl.drachms.

**LYCOPUS EUROPÆUS—Bitter Bugle.**—The herb. Tonic, febrifuge. Used in intermittent fevers, diarrhœa, etc.

Dose of powder, 40 to 80 grains; of fluid extract, 40 to 80 minims.

**LUPULINUM—Lupulin, Lupuline.**—The glands of Hop flowers or strobiles. Properties and uses same as hops.

Dose of powder, 5 to 15 grains; of fluid extract, 5 to 15 minims; of oleo-resin, 1 to 3 grains; of tincture,  $\frac{1}{2}$  to 2 fl.drachms.

**MACIS—Mace.**—The arillus, or covering of the fruit of *Myristica fragrans*. Stimulant, carminative, similar to nutmeg. Used chiefly as an aromatic addition to carminative preparations, etc.; also used for flavoring extracts.

Dose of powder, 10 to 30 grains; of fluid extract, 10 to 30 minims; of volatile oil, 1 to 3 minims.

**MACROTYS RACEMOSA—Black Cohosh, Black Snakeroot.**—(See *Cimicifuga*).

Dose of green plant fruit extract, 10 to 40 minims.

**MAGNESIUM.**—(Mg; 24.) A very light, whitish metal, resembling silver. Its specific gravity is 1.75. In thin ribbon it burns readily in the air when once ignited.

**MAGNESIA—Calcined Magnesia, Light Magnesia.**—An oxide of magnesium, made by calcining light carbonate of magnesium until it loses its carbonic acid. It is more active than carbonate of magnesium. It is antacid and laxative.

Dose, from 10 to 40 grains; of troches, 1 to 4 grains.

**MAGNESIA PONDEROSA — Heavy Magnesia.**—Made by

calcining heavy carbonate of magnesia. It is more familiarly known as Henry's, or Husband's, Magnesia. Properties and uses like Magnesia.

**MAGNESII CARBONAS**—Carbonate of Magnesium.—Several different processes are employed by manufacturers for making this preparation. It has, until recently, been mostly imported from England and Ireland; but the American production is now being considerably used, and seems fully equal to the imported. Antacid, laxative. Used for "heartburn," etc.

Dose,  $\frac{1}{4}$  to 2 drachms; of mixture of magnesia and asafetida (Dewee's Carminative), 1 to 4 fl.drachms; of Dalby's Carminative, 2 to 4 fl.drachms.

**MAGNESII CITRAS**.—A granulated Citrate of Magnesium, and a solution of Citrate of Magnesium, are popular forms of this preparation. They are laxative and refrigerant.

Dose of granulated citrate,  $\frac{1}{4}$  to 1 ounce; of solution, 4 to 12 fl.ounces.

**MAGNESII SULPHAS**—Epsom Salt, Sulphate of Magnesium.—Saline purgative, very generally used and called for as "salts," or "a dose of salts."

Dose,  $\frac{1}{4}$  to 1 ounce, in water.

**MAGNESII SULPHIS**—Sulphite of Magnesium.—It must be excluded from the action of the air in well stopped bottles, because it changes to sulphate when exposed. It must not be mistaken for Sulphate of Magnesium.

Dose, 15 to 30 grains.

**MAGNOLIA**.—The bark or flowers of *Magnolia glauca*. Aromatic, bitter tonic. Used to promote digestion, and in low fevers.

Dose of powder, 20 to 60 grains; of fluid extract, 20 to 60 minims.

**MAJORANA**—Sweet Marjoram.—The herb *Origanum Majorana*. Stimulant, carminative, emmenagogue. Used in infusion, as a warm drink.

Dose of fluid extract, 1 to 2 fl.drachms; of infusion (1:10), 1 to 2 fl.ounces.

**MALTUM**—Malt.—Malted barley. The extract of Malt is largely used as a nutritive and stimulant and digester. It has the consistence of thick syrup, and its value depends mainly upon its diastase, which digests starchy food. Beer, ale and malt liquors are also made from malt.

Dose of extract, a fluidrachm to a fluidounce; of fluid extract, 1 to 2 fl.drachms.

**MALVA SYLVESTRIS**—Common Mallow.—The leaves. Emollient, demulcent, diuretic. Used in catarrhal conditions of the stomach, bowels, and urinary organs.

Dose of powder, 2 to 10 grains; of fluid extract, 2 to 10 minims; of infusion (1:16),  $\frac{1}{2}$  to 1 fl.ounce.

**MANGANUM**—Manganese.—(Mn; 54.) A metal resembling iron, known mainly by its salts. Its chemical and medicinal properties are similar to iron.

**Black Oxide of Manganese**.—The most common and familiar salt of Manganese. It is much used for generating Oxygen Gas.

**Iodide of Manganese**.—Alterative, absorbent, tonic. Uses similar to Iodide of Iron. It is used chiefly in the form of a syrup, containing 10 per cent. of the salt.

Dose of salt, 2 to 5 grains; of syrup,  $\frac{1}{2}$  to 1 fl.drachm.



**Phosphate of Manganese.**—Made by precipitating a solution of Sulphate of Manganese with Phosphate of Sodium, in the same manner as in making Phosphate of Iron. It is usually used in solution or syrup. Uses similar to Iodide of Iron.

Dose of the precipitated salt, 5 to 15 grains; of syrup,  $\frac{1}{2}$  to 1 fl.drachm.

**Sulphate of Manganese.**—A pale rose-colored crystallized salt. Used as a cholagogue, purgative, and in small doses as a tonic.

Dose of powder, 2 to 10 grains.

Other Salts of Manganese are sometimes used, as the carbonate, chloride, hypophosphite, lactate, etc. Their uses and doses are similar to the corresponding Salts of Iron.

**MANGOSTANA—Mangosteen.**—The rind of the fruit of *Garcinia Mangostana*. Powerful astringent. Used mainly in dysentery, hemorrhage, etc.

Dose of powder, 20 to 60 grains; of fluid extract, 20 to 60 minims.

**MANGIFERA INDICA—Mango.**—The rind of the fruit. Astringent. Used in catarrh, diphtheria, dysentery, uterine diseases, etc.

Dose of powder, 15 to 60 grains; of fluid extract, 15 to 60 minims.

**MANNA.**—The concreted exudation from incisions made in the bark of *Fraxinus Ornus*, and other trees. Mild laxative. It was formerly much used in combination with Senna in the form of an infusion.

Dose from  $\frac{1}{4}$  to 2 ounces.

**MANZANITA.**—The leaves of *Arctostaphylos glauca*. Diuretic, astringent. Used in cystitis, strangury, incontinence of urine, stone in the bladder, etc.

Dose of powder,  $\frac{1}{2}$  to 2 drachms; of fluid extract,  $\frac{1}{2}$  to 2 fl.drachms; of infusion (1:10), 1 to 2 fl.ounces.

**MARANTA—Arrowroot.**—The starch from the rhizome of *Maranta arundinacea*. Used mainly as a food for invalids. It is cooked and used in the same manner as other starch.

**MARRUBIUM—Hoarhound.**—The leaves and tops of *Marrubium vulgare*. Bitter tonic, stomachic, etc. It is a popular remedy for cough, dyspepsia and loss of appetite.

Dose of powder, 30 to 60 grains; of fluid extract, 30 to 60 minims; of infusion (1:16), 1 to 2 fl.ounces; of syrup (1:10), 1 to 1 $\frac{1}{2}$  fl.drachms.

**MARUNTA COTULA—May Weed, Wild Chamomile.**—Nerve stimulant, antispasmodic, etc. Action similar to Valerian.

Dose of powder, 1 to 2 drachms; of fluid extract, 1 to 2 fl.drachms; of infusion (1:16) 1 to 3 fl.ounces.

**MASSÆ—Masses.**—Preparations in the form of pilular mass, which may be used for making pills, etc. (See page 246).

**MASTICHE—Mastic.**—The resin of *Pistacia lentiscus*. It is doubtful if it possesses any valuable medicinal qualities, although it is used in making aloes and mastic pills. It is used mainly as an ingredient in cements and varnishes.

**MATICO.** The leaves of *Arthante elongata*. Stimulant, blennorrhetic. Used in diseases of the urinary organs; also as a stimulant in relaxed conditions of the mucous membrane.

Dose of powder, 30 to 60 grains; of fluid extract, 30 to 60 minims; of infusion (1:16), 1 to 2 fl.ounces; of tincture, 1 to 3 fl.drachms.

**MATRICARIA**—German Chamomile. The flowers of *Matricaria Chamomilla*. Bitter tonic, stomachic. Used generally in the form of tea or infusion.

Dose of powder, 15 to 30 grains; of fluid extract, 15 to 30 minims; of infusion (1:16), 1 to 2 fl.drachms.

\* **MAYS**—Maize, Indian Corn.—The fruit (seed) of common corn.

**Corn Meal** is used as an ingredient for poultices and warm applications or fomentations.

**Corn Starch** is used as an article of diet for invalids.

**Maidis Stigmata**—*Corn Silk*.—The stigmas or “silk” of Indian corn, gathered before the corn is entirely ripe. Diuretic. Used in diseases of the bladder.

Dose of fluid extract,  $\frac{1}{2}$  to 2 fl.drachms; of infusion (1:10), 1 to 2 fl.ounces.

**MEL**—Honey.—A very sweet substance secreted by the honey-bee—*Apis mellifica*. It is used mainly in making certain confections and masses, and for making fermented drinks; also mixed with borax, etc., as a medicine for sore throat. It is a favorite addition to cough medicines.

**Mel Despumatum**.—*Clarified Honey*. (See page 247.)

**Mel Rosæ**.—*Honey of Rose*. (See page 248.)

*Hydromel* is a mixture of 1 fl.ounce of honey, with 9 fl.ounces of boiling water.

**Oxymel** is a mixture of 8 ounces by weight of honey, with 1 fl.ounce each of acetic acid and water. It is used in cough preparations.

**MELILOTUS**—Sweet Clover.—The flowering tops of *melilotus officinalis*. Seldom used internally. It is an agreeable flavoring ingredient in lotions and warm applications. Usually used in the form of infusion or fluid extract.

**MELISSA**—Lemon Balm, Sweet Balm.—The leaves and tops of *Melissa officinalis*. Cooling stimulant. The cool infusion is a grateful drink in fever, etc.

Dose of powder, 2 to 4 drachms; of fluid extract, 2 to 4 fl.drachms; of infusion (1:10), 2 to 6 fl.ounces.

**MENISPERMUM**—Yellow Parilla.—The rhizome and rootlets of *Menispermum canadense*. Alterative, bitter tonic, diuretic. Its action is similar to Sarsaparilla.

Dose of powder, 15 to 60 grains; of fluid extract, 15 to 60 minims.

**MENTHA PIPERITA**—Peppermint.—The leaves and tops of *Mentha piperita*. Stimulant, carminative, antispasmodic, cooling. The essence of peppermint is the most common preparation. It is used for colic, cramp, pain, colds, etc.

Dose of powder,  $\frac{1}{2}$  to 2 drachms; of fluid extract,  $\frac{1}{2}$  to 2 fl.drachms; of infusion (1:8), 1 to 2 fl.ounces; of oil, 1 to 3 minims; of spirit or essence, 5 to 30 minims; of troches, 1 to 3; of water,  $\frac{1}{2}$  to 2 fl.ounces.

**MENTHA VIRIDIS**—Spearmint.—Stimulant, carminative, antispasmodic. Used for colic, cramp, colds, etc.

Dose of powder, 30 to 60 grains; of fluid extract, 30 to 60 minims; of infusion (1:8), 1 to 2 fl.ounces; of oil, 2 to 5 minims; of spirit or essence, 10 to 30 minims; of water,  $\frac{1}{2}$  to 2 fl.ounces.

**MENTHOL**.—A stearopten obtained from oil of peppermint. This is a new preparation, which is recommended to be applied for neuralgia, sciatica, etc.; and inhaled for headache. Menthol cones for application,

by rubbing over the affected part, are the latest novelty among proprietary preparations, for neuralgia, etc.

**MENYANTHES**—Bogbean, Buckbean.—The leaves of *Menyanthes trifoliata*. Bitter tonic, emmenagogue, febrifuge, vermifuge; in large doses, cathartic and emetic. Used as a blood and liver medicine, and for dyspepsia, etc.

Dose of powder, 20 to 60 grains; of fluid extract, 20 to 60 minims.

**MERCURIALIS ANNUA**—Mercury Herb.—The leaves and flowering tops. Purgative, emmenagogue, alterative. Used in scrofula, syphilis, and for female complaints.

Dose of powder, 30 to 60 grains; of fluid extract, 30 to 60 minims.

**METHYSTICUM**—Ava Kava, Kava Kava.—The root of *Piper Methysticum*. Stimulant, diuretic, astringent. Used in rheumatism, gout, gonorrhœa, bronchitis, etc.

Dose of powder, 15 to 75 grains; of fluid extract, 15 to 75 minims.

**MEZEREUM**—Mezereon.—The bark of *Daphne Mezereum*. Alterative, stimulant, in syphilis, scrofula, rheumatism, etc.

Dose of powder, 5 to 15 grains; of extract, 1 to 3 grains; of fluid extract, 5 to 15 minims. Ointment of Mezereon, which is made from the extract, is official.

**MICROMERIA**—Yerba Buena.—The entire plant, *Micromeria Douglassii*. Stimulant, carminative, aromatic, stomachic.

Dose of powder, 1 to 2 drachms; of fluid extract, 1 to 2 fl.drachms.

**MIKANIA**—Guaco.—(See Guaco.)

**MISTURÆ**—Mixtures.—Preparations generally containing insoluble substances suspended in fluids or that will mix with them when shaken. (See page 248.)

**MITCHELLA**—Partridgeberry, Squaw Vine.—The entire plant *Mitchella repens*. Diuretic, tonic, astringent, parturient. Used in female diseases, and derangement of the urinary organs.

Dose of powder, 30 to 60 grains; of fluid extract, 30 to 60 minims; of compound fluid extract, 30 to 60 minims; of infusion (1:10), 1 to 2 fl.ounces; of compound syrup, 1 to 2 fl.drachms.

**MONESIA**.—An extract prepared from the bark of *Chrysophyllum glycyphlœum*. (See page 425.) Astringent, tonic, stimulant, in diarrhœa, spitting of blood, etc.

Dose of powder, 5 to 20 grains. The extract may be dissolved by the aid of heat in diluted alcohol.

**MONARDA FISTULOSA**—Wild Bergamot.—The herb. Used in intermittent fever, biliousness, etc.

Dose of powder,  $\frac{1}{2}$  to 1 drachm; of fluid extract,  $\frac{1}{2}$  to 1 fl.drachm.

**MONARDA PUNCTATA**—Horsemint.—The herb. Stimulant, diaphoretic, diuretic, emmenagogue.

Dose of powder, 10 to 30 grains; of fluid extract, 10 to 30 minims.

**MONOTROPA UNIFLORA**—Ice Plant, Fit Root.—The entire plant. Tonic, nervine, antispasmodic. Used in nervous diseases, restlessness, pains, etc.

Dose of powder, 30 to 60 grains; of fluid extract, 30 to 60 minims.

**MORPHINA**—Morphine (1880), *Morphia* (1870).—An alkaloid obtained from opium, anodyne, soporific. The alkaloid Morphine is seldom used in medicine, its salts being employed instead.

Dose,  $\frac{1}{8}$  to  $\frac{1}{4}$  grain.

**Oleate of Morphine.**—This is made of varying strength, from 2 to 5 per cent., and is used externally for pain, neuralgia, etc.

**MORPHINÆ ACETAS**—Acetate of Morphine.—Properties the same as the Sulphate of Morphine.

Dose, from  $\frac{1}{8}$  to  $\frac{1}{4}$  grain.

**MORPHINÆ HYDROCHLORAS**—Hydrochlorate or Muriate of Morphine.—Properties the same as the Sulphate of Morphine.

Dose, from  $\frac{1}{8}$  to  $\frac{1}{4}$  grain.

**MORPHINÆ SULPHAS**—Sulphate of Morphine.—Anodyne, hypnotic. Used to allay pain and produce sleep.

Dose,  $\frac{1}{8}$  to  $\frac{1}{4}$  grain; of compound (Tully's) powder, 5 to 10 grains; of solution (1 grain to 1 ounce), 1 fl.drachm.

**Other Salts of Morphine** are sometimes used, but the foregoing are those mainly employed.

**MORRHUÆ OLEUM**—Cod Liver Oil.—The oil from the liver of *Gadus Morrhua*. Used as a nutrient in wasting diseases, such as consumption, scrofula, etc; also externally.

Dose of oil, 1 to 4 fl.drachms; of emulsion ( $\frac{1}{2}$  oil), 2 to 4 fl.drachms.

The dose of emulsion when compounded with other substances is from 2 to 4 fl.drachms.

**MORUS NIGRA**—Mulberry.—The root. Astringent, tonic. Used in dysentery, prolapsus and relaxed condition of the mucous membrane.

Dose of powder, 1 to 2 drachms; of fluid extract, 1 to 2 fl.drachms.

**MOSCHUS**—Musk.—The concrete secretion from the preputial follicles of the male musk deer—*Moschus Moschiferus*. True musk is very expensive and is mainly used in perfumes. It was formerly much used in medicine, and is now occasionally. It is a powerful stimulant and antispasmodic, and is employed in nervous and typhoid conditions; also as an aphrodisiac.

Dose of powder, 5 to 10 grains; of tincture, 15 to 75 minims.

**MUCILAGINES**—Mucilages.—Solutions of soluble gums or other substances which make mucilage when dissolved in water. (See page 252.)

They are bland, demulcent and chiefly used as vehicles for other medicines.

**MUCUNA**—Cowhage, Cowage.—The hairs from the pods of *Mucuna pruriens*. Formerly used as a vermifuge, now but little used. Their only effect as a vermifuge or tæniacide is as an irritant.

**MYRCIÆ OLEUM**—Oil of Bay.—The volatile oil distilled from the leaves of *Myrcia acris*. Used for making Bay Rum and in perfumes, soaps, etc.

**Myrciæ Spiritus.**—*Bay Rum* is now officinal. (See page 278.) Imported Bay Rum is made by distilling the Bay leaves with Santa Croix Rum.

**MYRICA**—Bayberry.—The bark of *Myrica cerifera*. Stimulant, astringent. Used for relaxed conditions of the mucous membrane, dysentery, catarrh, etc.

Dose of powder, 30 to 60 grains; of compound ("composition") powder, 15 to 60 grains; of fluid extract, 30 to 60 minims.

**MYRICA GALE**—Sweet Gale, Meadow Fern.—The leaves and tops. Astringent, antispasmodic, antiscorbutic.

Dose of powder, 15 to 30 grains; of fluid extract, 15 to 30 minims.

**MYRISTICA** — Nutmeg. — The kernel of the seed of *Myristica fragrans*. Aromatic, stimulant, carminative. Used mainly as a flavoring in medicines and cookery.

Dose of powder, 10 to 30 grains; of fluid extract, 10 to 30 minims; of volatile oil, 2 to 3 minims; of spirit or essence,  $\frac{1}{2}$  to 1 fl.drachm.

**MYRTUS CHECAN** — Cheken Chequin. — The leaves. Tonic, expectorant, diuretic. Used in catarrh of the bladder, bronchitis and other affections of the mucous membrane.

Dose of powder, 1 to 2 drachms; of fluid extract, 1 to 2 fl.drachms.

**MYRRHA** — Myrrh. — The gum-resin of *Balsamodendron Myrrha*. Tonic, stimulant. It is given in combination with iron in debilitated conditions of the blood and mucous membrane, and in combination with capsicum in the form of "Hot Drops" or "No. 6," as a quick, warming stimulant, in diarrhoea, cholera-morbus, etc.

Dose of powder, 5 to 30 grains; of fluid extract, 10 to 60 minims; of tincture (1870), 30 to 90 minims; of tincture (1880), 15 to 50 minims; of hot-drops or No. 6 (tincture of myrrh and capsicum),  $\frac{1}{2}$  to 1 fl.drachm.

**NECTANDRA** — Bebeeru Bark. — The bark of *Nectandra Rodiæi*. Bitter tonic, stomachic. It is used as a general tonic and for uterine diseases. It contains a large amount of *Beberine*. (See page 415.)

Dose of powder, 1 to 2 drachms; of fluid extract, 1 to 2 fl.drachms.

**NEROLI OLEUM** — Oil of Neroli. — Distilled from the flowers of the bitter or sweet orange tree. It is used in perfume, and sometimes employed for making orange flower water, although it is inferior to and different than distilled orange flower water.

**NICOTINA** — Nicotine. — An alkaloid obtained from tobacco. *Nicotiana Tabacum*. It is a powerful poison, and is used only externally in the form of solution or ointment.

**NITROGENUM** — Nitrogen. — (N; 14.) A gaseous element comprising four-fifths of the atmosphere, and a portion of all animal matter.

**NITROGLYCERINUM** — Nitroglycerin. — A liquid prepared by the action of nitric and sulphuric acids on glycerin. A very explosive chemical. In medicine a 1 per cent. solution of nitro-glycerin in alcohol is used in nervous disorders, etc.

Dose of the one per cent. solution, 1 drop, largely diluted.

**NUPHAR ADVENA** — Yellow Pond Lily. — Astringent, demulcent, anodyne, alterative.

Uses and doses same as white pond lily.

**NUX-VOMICA**. — The seeds of *strychnos nux-vomica*. Nerve tonic. Its medicinal value consists of its strychnine and brucine. Properties same as Ignatia. Tincture and extract of *nux-vomica* are much used for constipation and lack of tone of the digestive organs.

Dose of powder 1 to 5 grains; of abstract,  $\frac{1}{2}$  to 2 grains; of extract,  $\frac{1}{4}$  to 1 grain; of fluid extract, 1 to 5 minims; of tincture (1870), 3 to 12 minims; of tincture (1880), 5 to 20 minims.

**NYMPHÆA ODORATA** — White Pond Lily. — Astringent, demulcent, anodyne, alterative. Used in dysentery and diseased mucous discharges, scrofula, etc.

Dose of powder, 20 to 30 grains; of fluid extract, 20 to 30 minims.



**ŒNOTHERA** — Evening Primrose.— The flowering twigs, bark and leaves of the young shoots of *Œnotheca biennis*. Mild nerve sedative, and astringent. Given in coughs, asthma and diarrhœa.

Dose of powder, 15 to 30 grains; of fluid extract, 15 to 30 minims; of green plant fluid extract, 10 to 30 minims.

**OLEA** — Oils.— Oils may be divided into two classes, Fixed and Volatile Oils.

**Fixed Oils** are usually obtained by expression from seeds, fats, fruit, or other substances. They are usually "fatty," sometimes solid, and have not generally the strong odor of volatile oils. They are mostly insoluble to any great extent in alcohol (except castor-oil).

**Volatile Oils** are generally obtained by distillation (except from some fruits, such as orange, lemon, etc.). They have usually the strong odor peculiar to the substance from which they are distilled and are mostly readily soluble in alcohol. In the Pharmacopœias of Sweden, Norway and Denmark they are termed "*Ætherolea*," and in perfumery they are frequently called "*Ottos*" or "*Attars*."

**OLEATA** — Oleates.— Preparations in which Oleic Acid is combined chemically with some radical (metallic or alkaloidal base). They are generally either fluid or of the consistence of a soft ointment; but Oleates of metals may be in the form of powder, precipitated from solutions. (See page 253.)

**OLEO-RESINÆ** — Oleo-Resins.— Preparations containing volatile oils and resins, made by exhausting drugs with some solvent of the oleo-resins and then evaporating the solvent. (See page 255.)

**OLIBANUM** — Frankincense.— The gum-resin from various species of *Boswellia*. Its properties and characteristics are similar to Myrrh. It is one of the chief ingredients of incense. Used in medicine mainly in plasters and pastilles.

Dose of powder, 30 to 60 grains.

**OLIVÆ OLEUM** — Olive Oil.— The fixed oil from the ripe fruit *Olea Europæa*. It is bland, demulcent, slightly laxative. Used mainly as an article of diet (Salad Oil), and as an emollient application or vehicle for applying more active medicines.

Dose,  $\frac{1}{2}$  to 2 fl.ounces.

**ONOSMODIUM VIRGINIANUM** — False Gromwell.— The root or seeds. Diuretic tonic. Used in kidney and urinary diseases.

Dose of powder, 1 to 2 drachms; of fluid extract, 1 to 2 fl.drachms.

**OPIUM**.—An extract (commonly called gum opium) prepared from *Papaver somniferum*, by drying the milky exudation obtained from incisions made in the unripe capsule of the plant. It should contain at least 10 per cent. of morphine. (See page 259.) It is narcotic, anodyne, hypnotic, and is used generally for pain, sleeplessness, delirium, etc.

Powdered opium is directed to be used in making all the official preparations of opium, except the extract.

Dose of opium, 1 grain; of extract of opium,  $\frac{1}{2}$  grain.

**OPII PULVIS** — Powdered Opium. The pharmacopœia directs opium to be dried at a temperature not exceeding 85° C., (185° F.), and reduced to a moderately fine (No. 50) powder. Powdered opium should contain not less than 12, nor more than 16, per cent. of morphine.

The doses of the official preparations made from powdered opium

are as follows, the greater quantity usually representing 1 grain of the powder:

	1870.	1880.
Acetate of Opium,	5 to 10 minims,	8 to 16 minims.
Tincture of Opium,	10 to 15 minims,	5 to 10 minims.
Tincture of Opium, camphorated,	1 to 2 fl.drachms,	1 to 2 fl.drms.
Tincture of Opium, deodorized,	10 to 15 minims,	5 to 10 minims.
Wine of Opium,	5 to 10 minims.	10 to 15 minims.

Confection of Opium (1870), 20 to 40 grains; Denarcotized Opium (1880),  $\frac{1}{2}$  to 1 grain; Powder of Opium and Ipecac (Dover's Powder), 5 to 10 grains; Tincture of Opium and Ipecac (1880), 5 to 10 minims.

Many other preparations containing opium are in use, but the doses are generally stated in the formulæ from which they are prepared.

**ORIGANUM** — Wild Marjoram. — The herb *Thymus vulgaris*. Stimulant, carminative, emmenagogue. Seldom used internally. Used externally in the form of fomentations.

Dose of fluid extract, 1 to 2 fl.drachms; of infusion (1:10), 1 to 2 fl.ounces.

Oil of Origanum, or Oil of Thyme, is much used as an ingredient in stimulating liniments. Oil of Origanum is usually adulterated. Druggists should buy the red Oil of Thyme to secure a good article.

**ORYZA** — Rice. — The seeds of *Oryza sativa*, with the hulls removed. Rice is largely used in sickness as a nutritive food.

Rice flour, bolted, is used as an application to the skin for chafing and irritated conditions. It is also employed as an ingredient for toilet powders, and a dusting for pills.

**OSMORRHIZA** — Sweet Cicely. — The root of *Osmorrhiza longistylis*. Aromatic, carminative expectorant. In coughs, flatulence, and impaired digestion.

Dose of powder, 30 to 60 grains; of fluid extract, 30 to 60 minims.

**OSMUNDA** — Buckhorn Brake. — The root of *Osmunda regalis*. Astringent, demulcent, tonic. Used in coughs, dysentery, rickets, etc.

Dose of powder, 1 to 2 drachms; of fluid extract, 1 to 2 fl.drachms.

**OSSA SEPIÆ** — Cuttlefish Bone. — The porous bone with its harder covering, *Sepia officinalis*. It is used as a "gritty" ingredient in tooth powder, and for canary birds.

**OSTRYA VIRGINICA** — Ironwood, Hornbeam. — The bark. Alterative, antiperiodic, tonic. Used in fevers, scrofula, dyspepsia, etc.

Dose of powder, 30 to 60 grains; of fluid extract, 30 to 60 minims.

**OVUM** — Egg. — The *Albumen Ovi* (white of egg) is used in medicine for making emulsions, nitrogenized iron, alum curd, etc., and as an antidote in poisoning, with corrosive sublimate.

The *vitellus ovi* (yolk of egg) is used in making glyconin (see page 225), for making emulsions, etc. The whole egg is used for making eggnog and other stimulating or nourishing drinks.

**OXYDENDRON** — Sourwood. — The twigs of *Oxydendron arboreum*. Tonic, etc. Used in dyspepsia, malaria and fevers.

Dose of powder, 30 to 60 grains; of fluid extract, 30 to 60 minims.

**OXYGENIUM** — Oxygen. — (O; 16.) A gaseous element, which supports life and combustion, and constitutes in its combinations at least two-thirds of the entire substance of the earth.



**Ozone.**—A form of Oxygen. More energetic than the ordinary gas. It is a powerful oxydizer and disinfectant.

Ozone generators are used for the purposes of disinfecting and destroying zymotic germs.

**PÆONIA OFFICINALIS**—**Peony.**—The root. Nervine, antispasmodic. Used in epilepsy, convulsions and nervous disorders, especially of children.

Dose of powder, 20 to 60 grains; of fluid extract, 20 to 60 minims.

**PANAX**—**Ginseng.**—The root of *Aralia quingefolia*. Tonic, stomachic. Although large quantities of ginseng are gathered in this country, it is but little used here, being mostly exported to China, where it is esteemed as a panacea for all ills, and brings fabulous prices.

Dose of powder,  $\frac{1}{2}$  to 2 drachms; of fluid extract,  $\frac{1}{2}$  to 2 fl.drachms.

**PANCREATINUM**—**Pancreatin.**—A substance obtained from pancreatic glands, by macerating them in water acidulated with hydrochloric acid, neutralizing the solution with carbonate of calcium, filtering, precipitating with alcohol and drying without heat. It emulsifies fats and converts starch into sugar. It is used generally in connection with cod liver oil or other fats, to assist in their digestion.

Dose, 2 to 5 grains.

**PAPAYER**—**Poppy.**—The capsules leaves or seeds of *Papaver somniferum*. The capsules and leaves are slightly anodyne and demulcent. Used for coughs, pain, etc.; also used externally for anodyne fomentation.

Dose of decoction (1:8), 1 to 2 fl.ounces; of fluid extract,  $\frac{1}{2}$  to 2 fl.drachms; of syrup,  $\frac{1}{2}$  to 2 fl.drachms.

**Poppy Seed.**—*Maw Seed*. Is used chiefly as food for birds. The oil made from the seed is bland, emollient, and is used for the same purposes as Olive Oil. It is also used by jewelers, under the name of watch oil.

**PARAFFINUM**—**Paraffin.**—A “waxy” substance, composed of solid hydrocarbons, obtained mainly from petroleum. As it is known in the market, it is a white substance like spermaceti, and is used for starch polish, ointments, etc.

**Paraffin Oil.**—In making paraffin, crude oil is chilled with ice, the liquid portion drawn off, and the solid or semi-solid mass pressed. The solid mass which remains in the press is paraffin, and the liquid obtained by pressure, crude paraffin oil. It is refined and used for lubricating, etc.

**PAREIRA**—**Pareira Brava.**—The root of *Chondodendron tomentosum*. Tonic, aperient, diuretic. Used in diseases of the kidneys and bladder.

Dose of powder, 30 to 60 grains; of decoction (1:8),  $\frac{1}{2}$  to 2 fl.ounces; of fluid extract, 30 to 60 minims; of infusion (1870), 1 to 2 fl.ounces.

**PENTHORUM SEDOIDES**—**Virginia Stonecrop.**—The herb. Antiphlogistic, sedative. Relieves congestion of the mucous membrane. Used in diseases of the lungs and urinary organs.

Dose of powder, 10 to 30 grains; of fluid extract, 10 to 30 minims; of green plant fluid extract, 10 to 20 minims.

**PEPO**—**Pumpkin Seed.**—The seeds of *Cucurbita Pepo*. Demulcent, tœniacuge, diuretic. The infusion is given to children as a diuretic; for tape-worm it is usually given in the form of an emulsion, made by

heating 2 to 4 ounces of the seeds, deprived of their covering, with water.

Dose of fluid extract, 2 fl.drachms to 2 fl.ounces.

**PEPSINUM SACCHARATUM**—Saccharated Pepsin.—Pepsin triturated with sugar of milk. (See page 261.) It assists in the digestion of nitrogenous food. In dyspepsia, indigestion, etc.

Dose, from 2 to 60 grains, or more, with or directly after meals; of liquid pepsin, 1 to 4 fl.drachms; of wine of pepsin, 1 to 2 fl.drachms.

**PERSIA GRATISSIMA**—Alligator Pear.—The seed. Sedative, anodyne. Used in intercostal neuralgia, etc.

Dose of powder, 30 to 60 grains; of fluid extract, 30 to 60 minims.

**PERUVIANUM BALSAMUM**—Balsam of Peru.—The balsam obtained from *Myroxylon Parcire*. Stimulant, expectorant. Used in catarrhal conditions, bronchitis, coughs, etc., and externally in stimulating ointments.

Dose, 10 to 30 minims, in the form of emulsion or mixed with some bland oil.

**PETROLATUM**.—A mixture of semi-solid hydrocarbons, obtained from petroleum. (See page 262.) It is largely used as an ointment or as an ointment base.

**PETROLEUM**—Rock Oil, Coal Oil.—A familiar substance obtained from the earth; the source of a great variety of useful articles of commerce.

**Crude Oil** is used in medicine as an application to sores, swellings and skin diseases, and as an ingredient in liniments. It is taken internally, in doses of from 10 to 60 minims, for lung, throat, and stomach troubles. It was formerly called *Seneca Oil*.

**PETROSELINUM**—Parsley.—The root or fruit (seed) of *Petroselinum sativum*. Diuretic, carminative, emmenagogue. Used in dropsy, stranguary and uterine diseases.

Dose of powdered root or seed,  $\frac{1}{2}$  to 2 drachms; of fluid extract,  $\frac{1}{2}$  to 2 fl.drachms.

**Apiol**.—A fluid, oily substance, obtained from parsley. Properties and uses the same as the seed. Used mainly as an emmenagogue.

Dose, 5 to 15 minims.

**PHELLANDRIUM**—Water Fennel.—The seed of *Enanthe phellandrium*. Stimulant, diaphoretic, diuretic, expectorant. Used in chronic bronchitis, catarrh, etc.

Dose of powder, 20 to 30 grains; of fluid extract, 20 to 30 minims.

**PHORADENDRON**—American Mistletoe.—The whole plant *Phoradendron flavescens*. Narcotic, tonic, antispasmodic. Uses similar to Ergot.

Dose of powder, 15 to 60 grains; of fluid extract, 15 to 60 minims.

**PHOSPHORUS**.—(P; 31.) An elementary substance obtained from bones. Nutritive stimulant to the nervous system. Used in sexual exhaustion, debility, nervous diseases, etc.

Dose from  $\frac{1}{100}$  to  $\frac{1}{80}$  grain, in the form of pills, oil or tincture; of phosphorated oil, 1 to 3 minims; of pills ( $\frac{1}{100}$  gr.), 1 to 2; of tincture (1 part phosphorus to 1,000 parts absolute alcohol), 10 to 30 minims.

**PHYSOSTIGMA**—Calabar Bean.—The seed of *Physostigma venenosum*. Narcotic, sedative. Used in neuralgia, tetanus, etc., and to contract the pupil of the eye in iritis.

Dose of powder, 1 grain; of extract,  $\frac{1}{16}$  to  $\frac{1}{6}$  grain; of fluid extract, 1 to 2 minims; of tincture, 15 to 30 minims.

**Salicylate of Physostigmine.**—*Salicylate of Eserine.* This is claimed to be the most permanent and satisfactory of the preparations of Physostigmine. It is used for the same purposes as the drug.

Dose,  $\frac{1}{100}$  to  $\frac{1}{80}$  grain.

**PHYTOLACCA**—**Poke.**—The fruit (berries) or root of *Phytolacca decandra*. Alterative, emetic, cathartic, narcotic. Used in rheumatism, scrofula, syphilis, and skin diseases.

Dose of powdered root, as an alterative, etc., 1 to 5 grains; as an emetic or purgative, 15 to 30 grains; of fluid extract, the same in minims; of green plant fluid extract, 2 to 15 minims; of powdered berries, 5 to 30 grains; of fluid extract, 5 to 30 minims.

**PILOCARPUS**—**Jaborandi.**—The leaflets of *Pilocarpus pinnatifolius*. Powerful diaphoretic and sialogogue. Used in dropsy, diabetes, asthma, bronchitis, etc.

Dose of powder,  $\frac{1}{2}$  to 2 drachms; of fluid extract,  $\frac{1}{2}$  to 2 fl.drachms; of infusion (1:8),  $\frac{1}{2}$  to 1 fl.ounce.

**Pilocarpine.**—An alkaloid obtained from Jaborandi.

The *Hydrochlorate of Pilocarpine* is officinal. Properties and uses the same as the drug.

Dose,  $\frac{1}{6}$  grain, by hypodermic injection.

**PILULÆ**—**Pills.**—Medicines made up into small spherical or oval masses, and usually composed mainly of extracts or concentrated medicines. (See page 263.)

**PIMENTA**—**Allspice.**—The nearly ripe fruit of *Eugenia Pimenta*. Aromatic, stimulant. Used chiefly in pastry, but sometimes employed in medicine as an ingredient in bitters and to promote the appetite.

Dose of powder, 5 to 40 grains; of fluid extract, 5 to 40 minims; of oil, 1 to 5 minims; of water,  $\frac{1}{2}$  to 1 fl.ounce.

**PIMPINELLA**—**Pimpernel.**—The root of *Pimpinella saxifraga*. Stimulant, diaphoretic, diuretic, expectorant. Used in catarrhal condition of the mucous membrane.

Dose of powder, 15 to 30 grains; of fluid extract, 15 to 30 minims.

**PINUS CANADENSIS**—**Hemlock.**—The inner bark. Astringent, stimulant, diaphoretic. Used in diarrhoea and relaxed conditions of the mucous membrane, prolapsus, etc.

Dose of powder, 15 to 30 grains; of fluid extract, 15 to 30 minims.

**Hemlock Gum** is a favorite domestic remedy, in the form of a plaster for rheumatism, lameness, etc.

**PINUS STROBUS**—**White Pine.**—The inner bark. Astringent, tonic, diuretic. Used in kidney and urinary diseases, and pulmonary complaints.

Dose of powder, 15 to 30 grains; of fluid extract, 15 to 30 minims.

**White Pine Turpentine, Pine Gum, Gum Thus.**—The concreted pitch of White Pine. Used as a stimulant in ointments and plasters.

**PIPER**—**Black Pepper.**—The dried unripe fruit of *Piper nigrum*. Warm stimulant, chiefly used as a seasoning for food; employed in medicine as a stimulant and carminative.

Dose of powder, 5 to 30 grains; of fluid extract, 5 to 20 minims; of oleo-resin,  $\frac{1}{4}$  to 1 grain.

**Piper Album**—**White Pepper.**—The ripe fruit of *Piper nigrum*, de-

prived of its outer covering. Properties the same as black pepper, but not so strong.

**Piperina.**—*Piperine*. A crystalline substance, obtained from black pepper. Uses the same as the drug.

Dose, from 1 to 5 grains.

**PISCIDIA**—**Jamaica Dogwood.**—The bark of the root of *Piscidia erythrina*. Narcotic, hypnotic. Used for the same purpose as opium, but does not constipate.

Dose of powder, 15 to 30 grains; of fluid extract, 15 to 30 minims.

**PIX BURGUNDICA**—**Burgundy Pitch.**—A resinous gum obtained from *Abies excelsa*. Used mainly in making plasters and ointments.

**PIX CANADENSIS**—**Canada Pitch, Hemlock Pitch, or Gum.**—(See *Pinus Canadensis*).

**PIX LIQUIDA**—**Tar, Pine Tar.**—“An empyreumatic oleo-resin, obtained by the destructive distillation of *Pinus Palustris*.” Stimulant to the mucous membrane, etc. It is used internally in catarrhal conditions; and externally, as an application to the skin, sores and ulcers, usually in the form of ointment.

Dose of tar, 1 to 2 fl.drachms; of glycerite of tar, 1 to 4 fl.drachms; of infusion (tar water), 2 to 8 fl.ounces; of syrup, 1 to 2 fl.drachms; of wine,  $\frac{1}{2}$  to 1 fl.drachm.

**Picis Liquidæ Oleum.**—*Oil of Tar* is distilled from tar, and is used for the same purposes.

Dose, from 2 to 5 minims, in solution or emulsion.

**PLANTAGO MAJOR**—**Common Plantain.**—The entire plant. Diuretic, astringent, generally used in the form of infusion, as a cooling diuretic.

Dose of powder, 2 to 3 drachms; of fluid extract, 1 to 2 fl.drachms; of infusion (1:10), 2 to 4 fl.ounces.

**PLUMBUM**—**Lead.**—(Pl; 206.5.) A metallic element. It and its salts are much used in the arts, and considerably in medicine.

**PLUMBI ACETAS**—**Acetate of Lead.**—A crystallized salt produced by the action of Acetic Acid on lead. It is largely used as a mordant in dyeing cotton goods, and in medicine as a powerful astringent and sedative. It is used mainly in hemorrhage from the internal organs, diarrhoea, etc.

Dose, from 1 to 3 grains.

**PLUMBI CARBONAS**—**Carbonate of Lead, White Lead.**—An insoluble salt used chiefly for painting. An ointment of white lead is officinal.

**PLUMBI IODIDUM**—**Iodide of Lead.**—Made by the decomposition of Nitrate of Lead, by Iodide of Potassium. It is given as a resolvent and alterative, for the cure of scrofulous tumors, swellings, and ulcers.

Dose, from  $\frac{1}{2}$  to 3 grains.

An ointment is also made from this salt.

**PLUMBI NITRAS**—**Nitrate of Lead.**—Prepared by the action of Nitric Acid on Litharge. Seldom used internally, but employed in the form of solution for astringent injections and lotions.

**PLUMBI OXIDUM**—**Oxide of Lead, Litharge.**—It is used in making several officinal plasters and other lead salts, and oleate of lead; also in making boiled linseed oil, and as a glaze for pottery, etc.

**PLUMBI OXIDUM RUBRUM**—Red Oxide of Lead, Red Lead.—This salt is used chiefly as a paint, and in making flint glass.

**PODOPHYLLUM**—Mandrake, May Apple.—The rhizome and rootlets of *Podophyllum Peltatum*. Cholagogue, cathartic, emetic. Used for biliousness, bilious fever, congestion of the liver, and as a general alterative and cathartic.

Dose of powder, 5 to 30 grains; of abstract, 2 to 5 grains; of extract, 1 to 4 grains; of fluid extract, 5 to 20 minims.

**Podophylli Resina**—*Podophyllin*.—The active principle of mandrake root, precipitated from the alcoholic extract by pouring it into cold water.

Dose,  $\frac{1}{8}$  to  $\frac{1}{2}$  grain.

**POLYPODIUM**—Polypody.—The root of *Polypodium vulgare*. Laxative, expectorant, vermifuge. It is sometimes used for tape-worm.

Dose of powder, 1 to 4 drachms; of fluid extract, 1 to 4 drachms.

**POLYGONATUM**—Soloman's Seal.—The rhizome of *Polygonatum giganteum* (*Convallaria polygonatum*). Demulcent, slightly astringent. Used for rheumatism, gout, dropsy, piles, etc.

Dose of powder, 15 to 30 grains; of fluid extract, 15 to 30 minims.

**POLYGONUM**—Smartweed, Water Pepper.—The leaves and tops of *Polygonum hydropiperoides*. Stimulant, emmenagogue, diaphoretic. Given usually in the form of infusion for fever, influenza, menstrual obstructions, etc.

Dose of fluid extract, 20 to 60 minims; of infusion (1:10), 1 to 4 fl. ounces; of green plant fluid extract, 20 to 40 minims.

**POLYTRICHUM**—Hair Cap Moss.—The entire plant *Polytrichum juniperum*. A powerful diuretic. Used for kidney diseases, gravel, etc.

Dose of powder, 1 to 2 drachms; of fluid extract, 1 to 2 fl. drachms.

**POLYGALA AMARA**—Bitter Polygala.—The plant. Bitter tonic. Used to promote the appetite and aid digestion.

Dose of powder, 5 to 15 grains; of fluid extract, 5 to 15 minims.

**POLYMNIA**—Bearsfoot, Leafcup.—The root or herb of *Polymnia uvedalia*. Tonic, stimulant. Used in rheumatism, enlarged liver or spleen, white swelling, etc.; also externally for tumors, abscesses and swellings.

Dose of powder, 3 to 8 grains; of fluid extract, 3 to 8 minims; of green plant fluid extract, 2 to 5 minims. An ointment may be made from the fresh plant or root by macerating it in hot lard.

**POLEMONIUM REPTANS**—Abscess Root.—The root, alterative, diuretic, astringent. Used in scrofulous swellings and ulcers, and diseases of the kidneys.

Dose of powder, 30 to 60 grains; of fluid extract, 30 to 60 minims.

**POPULUS CANDICANS**—Balm of Gilead.—The unfolded leaf buds. Stimulant, diuretic, tonic. Used in diseases of the lungs, stomach, kidneys, etc.; externally, in the form of ointment.

Dose of the fluid extract, 10 to 30 minims; of infusion (1:10),  $\frac{1}{2}$  to 2 fl. ounces.

**POPULUS**—White Poplar.—The bark of *Populus tremuloides*. Bitter tonic, antiperiodic. Used in intermittent fevers, etc.

Dose of powder, 30 to 60 grains; of decoction (1:8),  $\frac{1}{2}$  to 1  $\frac{1}{2}$  fl. ounces; of fluid extract, 30 to 60 minims.



**POTASSIUM**—(K ; 39.) A metallic element known mainly by its salts, which are very numerous and useful. The old name from which it derives its symbol is *Kalium*. It ignites when exposed to the air.

**POTASSA—Caustic Potash—Potassium Hydrate.**—Is made by evaporating liquor potassæ. Powerful caustic or escharotic. Used for cauterizing bites of animals or other poisonous sores; for warts, moles, etc.

**POTASSA CUM CALCE** — Potassa, with Lime, Vienna Paste.—Made by triturating together in a warm mortar, equal parts of potassa and unslacked lime. It is less caustic than potassa.

**POTASSÆ LIQUOR**—Solution of Potassa.—A five per cent. solution made, by mixing freshly slacked lime with a solution of bicarbonate of Potassium, or by dissolving Caustic Potassa in water. (See page 242.) It is used as an antacid in rheumatism, “heartburn,” etc., and to saponify balsams and oils in mixtures.

Dose, 5 to 40 minims, largely diluted.

**POTASSA SULPHURATA**—Sulphurated Potassa.—A mixture of Sulphide of Potassium with small quantities of Hyposulphite and Sulphate of Potassium. Given in rheumatism, gout and cutaneous diseases; also used in ointment and solution.

Dose, 2 to 10 grains.

**POTASSII ACETAS**—Acetate of Potassium.—Made by evaporating a neutral solution of Acetate of Potassium, which is prepared by neutralizing Acetic Acid with Carbonate of Potassium. It is diuretic, and is used mainly in kidney difficulties, rheumatism, etc.

Dose, 5 to 20 grains in solution.

**POTASSII BICARBONAS** — Bicarbonate of Potassium.—Used as an antacid, diuretic, and anthilithic, and for the same purposes as Carbonate of Potassium.

Dose, 15 to 60 grains, in solution.

**POTASSII BICHROMAS** — Bichromate of Potassium.—Largely used for coloring yellow, and somewhat employed in medicine as a stimulant to the mucous membrane, in doses of from  $\frac{1}{20}$  to  $\frac{1}{10}$  grain, in solution, and as an escharotic in syphilitic growths and ulcers. It is also used in combination with Sulphuric Acid as a battery fluid.

**POTASSII BITARTRAS**—Cream of Tartar.—A salt made by refining argols. Refrigerant, aperient, diuretic. Used with sulphur “for the blood,” with jalap, as a cathartic; with senna, as a laxative, etc.

Dose, a teaspoonful to a tablespoonful.

**POTASSII BROMIDUM**—Bromide of Potassium.—Made by combining solution of Potash with Bromine. It depresses the circulation and action of the heart, produces relaxation, contracts the capillaries, and relieves congestion. It is used for nervous excitement or irritation, delirium tremens, epilepsy, etc., and as a general sedative and anodyne.

Dose, 10 grains to 2 drachms.

**POTASSII CARBONAS**—Carbonate of Potassium, Sal Tartar.—Made by purifying pearl ash (Impure Carbonate of Potassium, 1870). It is given internally as an antacid, and used in ointment for skin diseases.

Dose, in solution, 5 to 15 grains.

**Shampoo Liquid**, used by barbers, is made by dissolving 1 ounce of Sal Tartar in 1 gallon of water.

**POTASSII CHLORAS** — Chlorate of Potassium.—Made by saturating a mixture of Carbonate of Potash and Slaked Lime, in water,

with Chlorine gas, and then evaporating the solution, and crystallizing. It is used in diseases of the throat, and wherever a mild chlorine preparation is available.

Dose, 5 to 15 grains; of troches (5 grains), 1 to 3.

**POTASSII CITRAS**—Citrate of Potassium.—Made by neutralizing a solution of Citric Acid with Carbonate of Potassium, and evaporating the solution. Refrigerant diaphoretic, diuretic.

Dose of powder, 15 to 30 grains, in solution; of solution (1880),  $\frac{1}{2}$  to 1 fl.ounce; of mixture (1880),  $\frac{1}{2}$  fl.ounce.

**POTASSII CYANIDUM**—Cyanide of Potassium.—Made by fusing together Ferrocyanide of Potassium and Carbonate of Potassium. It is chiefly used by photographers, and to destroy red ants, etc.; but is employed in medicine as a sedative in coughs, etc., and in liniments.

Dose,  $\frac{1}{16}$  to  $\frac{1}{8}$  grain, dissolved.

**POTASSII ET SODII TARTRAS**—Tartrate of Potassium and Sodium, Rochelle Salt.—Made by combining Acid Tartrate of Potash with Carbonate of Sodium. Refrigerant, laxative. Used as a gentle physic in fevers and inflammation. (See *Sodii et Potassii Tartras*.)

Dose of powder, a teaspoonful to a tablespoonful, dissolved in water.

**POTASSII FERRICYANIDUM**—Red Prussiate of Potash.—This salt is used as a reagent, but chiefly for dyeing.

**POTASSII FERROCYANIDUM**—Yellow Prussiate of Potash.—This is used for coloring. It was formerly given as an anodyne and astringent, but is not now employed medicinally.

**POTASSII HYPOPHOSPHIS**—Hypophosphite of Potassium.—Made by saturating a solution of Hypophosphorous Acid with Carbonate of Potassium, and evaporating the solution. Nutritive and tonic. Used in nervous debility and lung troubles.

Dose, from 5 to 20 grains, in solution.

**POTASSII IODIDUM**—Iodide of Potassium.—Made by neutralizing Solution of Potassa with Iodine, and crystallizing. Properties similar to Iodine. Alterative, absorbent. Used in scrofula, syphilis, rheumatism, swellings, etc.

Dose, 2 to 20 grains, in solution.

An Ointment of Iodide of Potassium is officinal. It is used as an absorbent and resolvent.

**POTASSII NITRAS**—Nitrate of Potassium, Saltpetre.—Made by refining the natural chemical. Refrigerant, diuretic, diaphoretic. Also used to relieve asthma, by inhaling the vapor when burning.

Dose of powder, 30 to 120 grains, or more.

**POTASSII PERMANGANAS**—Permanganate of Potassium.—A powerful deodorizer and disinfectant. Used mainly externally as an application or wash, but given in cancer of the stomach and internal ulcers.

Dose, 2 to 5 grains, in solution.

**POTASSII SULPHAS**—Sulphate of Potassium.—Laxative, in small doses; cathartic, in large. It is but little used except as an ingredient in Dover's powder.

Dose, 30 grains to 4 drachms.

**POTASSII SULPHIS**—Sulphite of Potassium.—Used as an antiseptic.

Dose, 15 to 30 grains.



**POTASSII TARTRAS**—Tartrate of Potassium.—Diuretic, in small doses; laxative, in large doses.

Dose, 2 drachms to 1 ounce, in solution.

**POTENTILLA CANADENSIS**—Cinquefoil, Firefinger.—The plant. Astringent, tonic. Used in night sweats, chronic diarrhœa, fevers, etc., and as a gargle for sore throat, spongy gums, etc.

Dose of powder, 20 to 60 grains; of fluid extract, 20 to 60 minims.

**POTENTILLA TORMENTILLA**—Tormentil.—The root. Astringent. Uses similar to rhatany.

Dose of powder, 10 to 30 grains; of fluid extract, 10 to 30 minims.

**PRINOS**—Black Alder.—The bark of *Prinos verticillatus*. Astringent, tonic. Used in fevers and relaxed conditions of the mucous membrane.

Dose of powder, 30 to 75 grains; of fluid extract, 30 to 75 minims.

**PRUNUM**—Prune.—The dried fruit of *Prunus domestica*. Used in laxative fruit lozenges, and as an acid fruit in convalescence.

**PRUNUS VIRGINIANA**—Wild Cherry.—The inner bark. Bitter tonic, stomachic, slightly sedative. Used in stomach troubles, coughs, etc.

Dose of powder, 30 to 60 grains; of fluid extract, 30 to 60 minims; of infusion (1880), 1 to 3 fl.ounces; of syrup, 2 to 4 fl.drachms; of wine,  $\frac{1}{4}$  to 1 fl.ounce.

**PTELIA**—Wafer Ash, Hoptree.—The bark of *Ptelea trifoliata*. Tonic appetizer. Used for stomach troubles, dyspepsia, etc.

Dose of powder, 10 to 30 grains; of fluid extract, 10 to 30 minims; of green plant fluid extract, 5 to 20 minims.

**PULSATILLA**.—The entire plant *Anemone pulsatilla*. Alterative, sedative. Used in cutaneous and nervous disorders, and amaurosis.

Dose of powder, 2 to 5 grains; of fluid extract, 2 to 5 minims.

**PULVURES**—Powders.—Mixtures of various drugs in the form of powder are called powders. (See page 264.)

The doses of the officinal powders are as follows:

Pulvis Aloes et Canellæ (Hiera Picra),	5 to 15 grains.
Pulvis Antimonialis,	3 to 8 “
Pulvis Aromaticus,	5 to 30 “
Pulvis Cretæ Compositus,	10 to 60 “
Pulvis Effervescens Compositus (Seidlitz),	1 powder.
Pulvis Glycyrrhizæ Compositus,	30 to 60 grains.
Pulvis Ipecacuanhæ et Opii,	5 to 15 “
Pulvis Jalapæ Compositus,	30 to 60 “
Pulvis Morphinæ Compositus,	5 to 10 “
Pulvis Rhei Compositus,	5 to 20 “

**PULMONARIA**—Lungwort.—The herb *Pulmonaria officinalis*. Demulcent, astringent. Used in catarrhal and pulmonary diseases.

Dose of powder, 1 to 2 drachms; of fluid extract, 1 to 2 fl.drachms.

**PYCNANTHEMUM**—Mountain Mint.—The herb *Pycnanthemum incanum*. Diaphoretic, tonic, stimulant. Used in colds, influenza, etc.

Dose of powder, 30 to 60 grains; of fluid extract, 30 to 60 minims.

**PYRETHRUM**—Pellitory.—The root of *Anacyclus Pyrethrum*. Stimulant, sialagogue. Used in paralysis, neuralgia, toothache, etc. The root is generally chewed.

Dose of powder, 15 to 60 grains; of fluid extract, 15 to 60 minims; of tincture, 1 to 2 fl.drachms.

**PYRETHRUM PARTHENIUM**—**Feverfew**.—The herb *Matricaria parthenium*. Tonic, emmenagogue, stimulant, vermifuge, etc. Used in female complaints, hysteria, etc.

Dose of powder, 15 to 50 grains; of fluid extract, 15 to 60 minims.

**PYRETHRUM ROSEUM**—**Insect Powder**.—The powdered flowers of this and several other species of *Pyrethrum* is the popular "Insect Powder."

**PYROLA ROTUNDIFOLIA**—**Canker Lettuce**.—The herb. Tonic, astringent, diuretic. Used in kidney and bladder troubles, eruptions, ulcers, sore throat, etc.

Dose of powder, 20 to 60 grains; of fluid extract, 20 to 60 minims.

**PYROXYLINUM**—**Pyroxylin, Soluble Gun-Cotton**.—(See page 268.) Made by macerating Cotton in Nitro-Sulphuric Acid, and then washing it to remove traces of free acid. Explosive. It is used in medicine for making Collodion.

**PYRUS MALUS**—**Apple Tree**.—The inner root bark. Tonic febrifuge. Used in low fevers and debility.

Dose of powder, 20 to 60 grains; of fluid extract, 20 to 60 minims.

**QUASSIA**—The wood of *Picræna (Simaruba) excelsa*. Bitter tonic, stomachic. In dyspepsia and to promote digestion. It is much used in cheap Bitters.

Dose of extract, 1 to 2 grains; of fluid extract, 20 to 60 minims; of infusion (1870), 1 to 2 fl.ounces; of tincture, 1 to 2 fl.drachms.

Quassia Cups are turned from the wood, and impart their bitterness to water which is drank from them.

**QUERCUS ALBA**—**White Oak**.—The inner bark. Astringent. Used in the form of decoction, as an astringent wash; also, as an injection for discharges, prolapsus, and relaxed mucous membrane. It is given internally for chronic diarrhœa, etc.

Dose of powder, 20 to 60 grains; of fluid extract, 20 to 60 minims.

**QUILLAIA**—**Soap Tree**.—The bark of *Quillaya Saponaria*. Stimulant, alterative, diuretic. The powder produces violent and prolonged sneezing.

Dose of powder, 15 to 60 grains; of fluid extract, 15 to 30 minims.

A tincture of soap bark made with 2 ounces of the bark and a pint of diluted alcohol, makes a good soda foam, and is also used in liquid dentifrices or tooth washes.

**QUINIDINÆ SULPHAS**—**Sulphate of Quinidine**.—A salt prepared from the alkaloid *Quinidia*. Uses and doses the same as Sulphate of Quinine.

**QUININA**—**Quinine** (1880), *Quinia* (1870).—An alkaloid of Cinchona Bark. It is used mainly for preparing its salts and solutions, and making Oleate of Quinine.

Oleate of Quinine is made from 5 to 25 per cent. of Quinine, by triturating the alkaloid with Oleic Acid.

**QUININÆ ARSENIAS**—**Arseniate of Quinine**.—It is about  $\frac{1}{8}$  Arsenious Acid. Antiperiodic. In malaria, etc.

Dose,  $\frac{1}{8}$  to  $\frac{1}{2}$  grain.

**QUININÆ BISULPHAS**—Bisulphate of Quinine.—It is much more soluble than Sulphate of Quinine. Uses and dose the same as the sulphate.

**QUININÆ HYDROBROMAS**—Hydrobromate of Quinine.—Quite soluble, and therefore a good salt for hypodermic injections. Uses and dose the same as Quinine.

**QUININÆ HYDROCHLORAS**—*Hydrochlorate* (Muriate) of Quinine.—Uses and dose the same as the sulphate, but much more soluble.

**QUININÆ SULPHAS**—*Sulphate of Quinine*.—The best known and most used of the Quinine Salts. It is tonic, antiperiodic, antiseptic, and is used in all diseases requiring such treatment, particularly in fevers, malaria, neuralgia, etc. It is given in the form of powders and pills, and in solution.

Dose, from 1 to 30 grains.

**QUININÆ VALERIANAS**—Valerianate of Quinine.—In addition to the properties of Quinine, this salt combines the nervine properties of Valerian. It is used in neuralgia, nervous weakness, etc.

Dose, from 1 to 3 grains.

**Other Salts of Quinine**, as the Carbolate, Hypophosphite, Phosphate, Salicylate, Tannate, etc., are frequently used, but as their properties and doses are similar to the salts already named, further mention is unnecessary.

**RESINÆ**—Resins.—Substances obtained from plants and trees, generally insoluble in water, and frequently associated with oils. They are frequently called gums. They are usually the active medicinal principles of the drugs from which they are derived. (See page 269.)

**Resinoids**.—The so-called “active principles” made by precipitating the alcoholic extracts of certain drugs with water. (See page 271.)

**RHAMNUS CATHARTICUS**—Buckthorn.—The fruit. The berries are generally known under this heading, and the bark under the name of *Frangula*, which see. Hydragogue cathartic.

Dose of dried fruit, 30 to 75 grains; of fluid extract, 30 to 75 minims; of juice, from fresh berries, 15 to 60 minims; of syrup, 1 fl.drachm.

**RHAMNUS PRUSHIANA**—*Cascara Sagrada*.—The bark. Bitter tonic, laxative. Used in habitual constipation, and as a tonic in dyspepsia, etc.

Dose of powder, 15 to 60 grains; of fluid extract, 15 to 60 minims; of solid extract, 4 to 12 grains.

**RHEUM**—Rhubarb.—The root of *Rheum officinale*, and other species of *Rheum*. Stomachic, tonic, laxative, astringent. It first acts as a laxative and then as an astringent, making it a valuable remedy in dysentery or other diseases, when it is first desirable to remove the contents of the bowels and then stop the discharges. It is much used as a stomachic in dyspepsia, constipation, etc.

Dose of powder, 10 to 60 grains; of extract, 5 to 15 grains; of fluid extract, 10 to 120 minims; of infusion (1870), 1 to 2 fl.ounces; of powder compound with magnesia and ginger, 15 to 75 grains; of powder with magnesia, 10 to 30 grains; of aromatic syrup, 1 to 2 fl.drachms; of syrup, 1 to 2 fl.drachms; of tincture, 1 to 4 fl.drachms; of aromatic tincture, 1 to 3 fl.drachms; of sweet tincture, 1 to 4 fl.drachms; of wine, 1 to 4 fl.drachms; of mixture, with soda, 1 to 8 fl.drachms.

**RHODODENDRON MAXIMUM**—Great Laurel.—The leaves. Sedative. Used in obstinate cough, consumption, etc.

Dose of powder, 1 to 3 grains; of fluid extract, 1 to 3 minims.

**RHŒAS**—Red Poppy.—The petals of *Papaver Rhæas*. Anodyne, soporific. Used mainly for coloring other preparations.

Dose of powder, 30 to 60 grains; of fluid extract, 30 to 60 minims; of syrup, 1 to 2 fl.drachms.

**RHUS AROMATICA**—Sweet or Fragrant Sumach.—The root bark. Astringent, diuretic, tonic, stimulant. Used in diseases of the urinary organs, diarrhœa, summer complaint, etc.

Dose of powder, 15 to 75 grains; of fluid extract, 15 to 75 minims; of green plant fluid extract, 10 to 60 minims.

**RHUS GLABRA**—Sumach.—The fruit and bark. The fruit is a mild acid astringent. Used in catarrhal conditions, relaxed mucous membrane, etc. Dose of fluid extract, 30 to 75 minims.

The bark is astringent, tonic, and is used in night-sweats, diarrhœa, gleet, leucorrhœa, etc.

Dose of powder, 30 to 75 grains; of decoction (1:8), 1 to 2 fl.ounces; of fluid extract, 30 to 75 minims.

**RHUS TOXICODENDRON**—Poison Oak, Poison Ivy.—The fresh leaves only should be used for making preparations. It is narcotic, irritant, and is used in paralysis, rheumatism, incontinence of urine, skin diseases, etc.

Dose of green plant fluid extract, 2 to 10 minims.

**RICINUS**—Castor-Oil Plant.—The leaves or beans of *Ricinus communis*. Cathartic. The leaves are reputed to increase the milk of nursing women.

Dose of leaves, 1 to 3 drachms; of fluid extract of leaves, 1 to 2 fl.drachms; of bean, 30 to 60 grains; of fluid extract of bean, 30 to 60 minims.

**RICINI OLEUM**—Castor-Oil.—The fixed oil obtained by expression from the Castor-Oil beans. It is a familiar cathartic, and is also much used for lubricating, and as an ingredient of hair oils and tonics. It mixes readily in all proportions with alcohol.

Dose, from 1 drachm to 1 ounce, or more. It is more pleasant and effective given in the form of an emulsion.

**ROBINIA**—Locust.—The root bark of *Robinia pseudacacia*. Tonic, laxative. Used in fevers and low conditions.

Dose of powder, 10 to 20 grains; of fluid extract, 10 to 20 minims.

**ROSA CENTIFOLIA**—Pale Rose, Hundred Leaf Rose.—The dried petals. Used only for flavoring and for making Rose Water.

**ROSA GALLICA**—Red Rose, French Rose.—The dried petals. Used mainly with other medicines as a flavoring ingredient. The official preparations are:

Confection of Rose, used for making pills, etc.; Fluid Extract of Red Rose, dose,  $\frac{1}{2}$  to 1 fl.drachm; Honey of Rose, used for sore mouth and throat; Syrup of Rose, used as a vehicle for medicines.

**ROSÆ OLEUM**—Oil or Otto of Rose.—Made by distillation from the petals of the Damask Rose. It is used only in perfumery, and for making rose water.

**ROSMARINUS**—Rosemary.—The leaves of *Rosmarinus officinalis*. Stimulant, diuretic, diaphoretic, emmenagogue. The oil is used in perfumes.

Dose of powder, 15 to 20 grains; of fluid extract, 15 to 20 minims; of oil, 2 to 5 minims.

**RUBIA—Madder.**—The root of *Rubia tinctorum*. It is used mainly for coloring, but was formerly much employed as a diuretic and emmenagogue.

Dose of powder, 20 to 40 grains; of fluid extract, 20 to 40 minims.

**RUBUS IDÆUS—Red Raspberry.**—The fruit is used for making Raspberry Juice, and the leaves as an astringent in diarrhoea, etc.

Dose of powdered leaves, 1 to 2 drachms; of fluid extract, 1 to 2 fl.-drachms.

The juice is used as a vehicle for medicines, and in soda syrups.

**RUBUS VILLOSUS—Blackberry.**—The fruit is used for making Blackberry Juice, Blackberry Wine, cordial, syrup, etc. The bark of the root is astringent, and is used chiefly in diarrhoea, dysentery, etc.

Dose of fluid extract,  $\frac{1}{2}$  to 2 fl.drachms; of cordial, 1 to 3 fl.drachms.

**RUDBECKIA—Thimbleweed.**—The leaves and tops of *Rudbeckia laciniata*. Diuretic, tonic. Used in catarrhal conditions of the urinary organs; also in bronchitis.

Dose of fluid extract, 1 to 3 fl.drachms; of infusion (1:10), 2 to 6 fl.ounces.

**RUMEX—Yellow Dock.**—The root of *Rumex crispus*. Alterative, tonic and laxative. Much used as an ingredient of alterative syrups and compounds for scrofula, liver complaint, rheumatism, skin diseases, etc.

Dose of powder,  $\frac{1}{2}$  to  $1\frac{1}{2}$  drachms; of fluid extract,  $\frac{1}{2}$  to  $1\frac{1}{2}$  fl.-drachms.

**RUTA—Rue.**—The leaves of *Ruta graveolens*. Stimulant, carminative, emmenagogue. Used in menstrual disturbances, and sometimes for worms.

Dose of powder, 15 to 30 grains; of fluid extract, 15 to 30 minims; of oil, 2 to 5 minims.

**SABADILLA—Cevadilla.**—The seeds of *Asagraea officinalis*. (Veratrum S.) Arterial sedative, similar in action to *Veratrum Viride*. Used in heart disease, neuralgia, etc.; also, externally, for vermin.

Dose of powder, 1 to 4 grains; of fluid extract, 1 to 4 minims.

The alkaloid *Veratrine* is made from this drug.

**SABBATIA—American or Red Centaury.**—The flowering plant. Bitter tonic. Used as a stomachic and appetizer.

Dose of powder, 30 to 60 grains; of fluid extract, 30 to 60 minims.

**SABBATIA ELLIOTTII—Quinine Flower.**—The flowering plant. Stomachic tonic and antiperiodic. Used in malaria and fevers.

Dose of powder, 20 to 60 grains; of fluid extract, 20 to 60 minims.

**SABAL SERRULATA—Palmetto Saw Berries.**—The fruit, sedative, diuretic, nutritive. Used in pulmonary complaints, asthma and coughs, and for debility.

Dose of powder, 30 to 60 grains; of fluid extract, 30 to 60 minims.

**SABINA—Savin.**—The tops and small twigs of *Juniperus Sabina*. Tonic, emmenagogue; also used externally in the form of a cerate as a stimulant for indolent ulcers, etc. The oil is sometimes used to produce abortion.

Dose of powder, 5 to 20 grains; of fluid extract, 5 to 20 minims; of oil, 5 to 10 minims.



**SACCHARUM**—Sugar.—The officinal sugar is the purified, crystallized saccharine matter obtained from the juice of sugar cane (*Saccharum officinarum*.)

*Grape Sugar* (*Glucose*) is produced in nature, and made artificially from starch by treating it with dilute Sulphuric Acid, etc. It is much less sweet than cane sugar.

*Maple Sugar* is made by boiling the "sap" of the maple tree until it will crystallize.

*Sorghum Sugar and Syrup* are made from the juice of the Sorghum Corn.

*Beet Sugar* is made from common beets, and is considerably used in France and some other countries.

**SACCHARI SYRUPUS FUSCUS**—Molasses, Theriaca, Treacle.—The unrefined crude syrup made from sugar cane, from which sugar is prepared. It is often used as an excipient for making pill masses, and a vehicle for powders and other medicines.

**SACCHARUM LACTIS**—Milk Sugar.—A sugar made by evaporating the whey from cows' milk, and purifying it by crystallization. It is used as a vehicle with which to triturate active medicines.

**SAGO**.—A starch prepared from the interior pithy substance of the stem of the Sago Palm and similar trees. When cooked it is a nutritive diet for invalids.

**SALIX**—Willow.—The bark of *Salix alba*, *Salix nigra* and other species of willow. Bitter tonic, antiperiodic, astringent. Used in debility, fevers, malaria, etc.

Dose of powder, 30 to 75 grains; of fluid extract, 30 to 75 minims.

**Salicinum**—*Salicin*.—The active principle obtained from the bark of various species of willow. It has the same properties as the bark, except that it is not astringent. It is frequently employed when quinine is not desired.

Dose from 5 to 30 grains.

**SALVIA**—Sage.—The leaves of *Salvia officinalis*. Stimulant, tonic, astringent. An infusion of the leaves called "sage tea" is a very popular domestic remedy as a diaphoretic and for influenza, cold, worms, etc. A gargle of infusion of Sage with alum or borax is much used for sore throat, sore mouth, etc. The powdered leaves are much used as seasoning for meat.

Dose of powder, 30 to 75 grains; of fluid extract, 30 to 75 minims; of infusion (1870), 1 to 3 fl.ounces.

**SAMBUCUS**—Elder.—The flowers and fruit (berries) of *Sambucus Canadensis*. The flowers are laxative, diaphoretic, diuretic and are much used as a domestic remedy under the name of "Elder-blo' tea."

Dose of fluid extract, 30 to 60 minims; of infusion (1:16), 1 to 4 ounces.

The fruit (berries) is acid, aperient, and diaphoretic. The juice and wine made from the berries are laxative.

In doses of  $\frac{1}{2}$  to 2 fl.ounces.

**SANDARACA**—Sandarac.—A resin from *Callitris quadrivalvis*. Used mainly for making fine varnish for photographers and other uses.

**SANGUINARIA**—Bloodroot.—The rhizome of *Sanguinaria Canadensis*. Active emetic and irritant, in large doses; stimulant, alterative and tonic, in small doses. It is used in all kinds of catarrh, bronchitis, asthma, blood disorders, etc.; and externally, as an application to indolent sores and ulcers.

Dose of powder, 2 to 20 grains; of fluid extract, 2 to 20 minims; of tincture, 10 to 30 minims; of vinegar, 10 to 30 minims.

**SANTALUM ALBUM**—White Santal Wood.—The wood is used for the same purposes as the Yellow Santal Wood, but is less frequently found in the market.

**Santali Oleum**—*Oil of Santal*. The volatile oil distilled from *Santalum album*. Properties similar to Copaiba. Used for gonorrhœa, gleet, etc.

Dose, from 10 to 25 drops, in capsules or emulsion.

**SANTALUM CITRINUM**—Yellow Santal Wood.—The wood of *Santalum Freycinetianum*. Properties similar to Copaiba. The fluid extract is aromatic, balsamic, stimulant. The wood is used for sachet powders, etc.

Dose of fluid extract, 1 to 2 fl.drachms.

**SANTALUM RUBRUM**—Red Saunders.—The red heart-wood of *Pterocarpus santalinus*. Used only for coloring alcoholic liquids.

**SANTONICA**—Wormseed (Levant or German).—The unexpanded flower heads of *Artemisia maritima*. Vermifuge. The powder mixed with syrup is the most effective.

Dose of powder, 15 to 75 grains; of fluid extract, 10 to 30 minims.

**SANTONINUM**—Santonin.—A crystalline principle prepared from Wormseed. Anthelmintic. A favorite vermifuge, used in the form of lozenges, powders, and mixtures.

Dose of powder, 1 to 3 grains; of troches (1 grain), 1 to 3.

Santonine should never be given more than 3 or 4 doses in succession, on account of its cumulative effect.

**Santoninas Sodii**—*Santoninate of Sodium*.—Properties the same as Santonine, but is much more soluble.

Dose, 2 to 5 grains; of troches (1 grain), 2 to 5.

**SAPO**—White Castile Soap.—Prepared from Olive Oil and Cautic Soda. When given internally, it acts as a laxative; externally, it is cleansing and healing, and is used in cerates, plasters and liniments.

Dose of powder, 5 to 10 grains, in form of pill.

Soap Liniment is used for sprains, swellings and bruises.

**SAPONARIA**—Soapwort.—The root of *Saponaria officinalis*. Alterative, diaphoretic. Used in rheumatism, gout, and skin diseases.

Dose of fluid extract, 1 to 4 fl.drachms; of infusion (1:10), 2 to 6 fl.ounces.

**SAPO VIRIDIS**—Green Soap.—A potash soap made with hemp seed or linseed oil. Used externally for skin diseases. A tincture of green soap is officinal. It is used for the same purposes as the soap itself.

**SARRACENIA**—Pitcher Plant, Huntsman's Cup.—The flowering plant *Sarracenia purpurea*. Stimulant, tonic. Used mainly in diseases of the stomach, dyspepsia, etc.

Dose of powder, 20 to 30 grains; of fluid extract, 20 to 30 minims.

**SARSAPARILLA**.—The root of *Smilax officinalis*, and other varieties. The Honduras Sarsaparilla is considered best, but many other varieties are used and preferred by some. Alterative, tonic. Used as a "blood purifier" and depurator in scrofula, syphilis, skin diseases, etc.

Dose of powder, 30 to 75 grains; of decoction (1:8), 1 to 3 fl.ounces; of extract, 5 to 30 grains; of fluid extract,  $\frac{1}{2}$  to 2 fl.drachms; of com-



pound fluid extract,  $\frac{1}{2}$  to  $1\frac{1}{2}$  fl.drachms; of compound syrup, 1 to 3 fl.drachms.

**SASSAFRAS.**—The inner root-bark of *Sassafras officinalis*. Aromatic, alterative, diaphoretic, stimulant, and astringent. It is mostly used in combination with other drugs as a "blood purifier."

Dose of powder, 30 to 75 grains; of fluid extract, 30 to 75 minims; of infusion (1:16), 2 to 6 fl.ounces; of oil, 2 to 4 minims; of spirit (essence) (1:15), 10 to 60 minims.

**SASSAFRAS MEDULLA**—*Sassafras Pith*.—The pith of the branches of *Sassafras officinalis*. Mucilaginous. The pith is employed for making Sassafras Mucilage, Jackson's, and other cough syrups, and is sometimes made into an ointment by macerating it in hot lard. The mucilage is used as a vehicle for other medicines.

**SATUREJA**—*Summer Savory*.—The flowering plant *Satureja hortensis*. Tonic, stomachic. Mainly used as a seasoning for meats and dressings.

Dose of powder, 30 to 60 grains; of fluid extract, 30 to 60 minims.

**SCAMMONIUM**—*Scammony*.—The dried resinous exudation from the root of *Convulvulus Scammonia*. It is called *Virgin Scammony*, to distinguish it from Resin of Scammony, which is obtained from the root by repeatedly digesting it with boiling alcohol. It is an active hydragogue cathartic.

Dose, 5 to 20 grains, usually combined with other drugs, which prevent griping.

**SCAMMONII RESINA**—*Resin of Scammony*.—A resin obtained from Scammony root by repeatedly boiling it in alcohol, concentrating the extract thus obtained by distilling off the alcohol and then precipitating the resin by pouring the soft extract into cold water. Uses the same as Virgin Scammony.

Dose, 3 to 10 grains.

**SCILLA**—*Squill*.—The sliced and dried bulbs of *Urginea Scilla* (*Scilla Maritima*). Expectorant, diuretic in small doses, purgative and emetic in large doses. It is used mainly in coughs and chronic bronchitis and in kidney difficulties.

Dose of powder, 1 to 10 grains; of fluid extract, 1 to 10 minims; of oxymel (equal parts vinegar of squill and honey), 1 to 2 fl.drachms; of syrup, 15 to 60 minims; of compound syrup, 10 to 60 minims; of tincture, 5 to 30 minims; of vinegar, 10 to 30 minims; of wine (1:10), 15 to 60 minims.

**SCOPARIUS**—*Broom Tops*.—The tops of *Sarothamnus Scoparius*. Diuretic, hydragogue cathartic. Used in dropsy and all conditions requiring an active diuretic.

Dose of decoction (1:16), 1 to 3 fl.ounces; of fluid extract, 30 to 75 minims; of juice,  $1\frac{1}{2}$  to 1 fl.drachm.

**SCROFULARIA NODOSA**—*Carpenter's Square, Figwort*.—The leaves or root. Alterative, anodyne, diuretic. Used in scrofulous diseases, liver complaint, dropsy, etc.

Dose of powder, 30 to 60 grains; of fluid extract, 30 to 60 minims.

**SCUTELLARIA**—*Skullcap*.—The flowering plant, *Scutellaria laterifolia*. Nervine, antispasmodic, tonic. Used in nervous diseases, restlessness, excitability, etc.

Dose of powder, 1 to 2 drachms; of fluid extract, 1 to 2 fl.drachms; of infusion (1:10) 1 to 2 fl.ounces.

**SENECIO**—Life Root, Squaw Weed.—The entire plant *Senecio aureus*. Aromatic, stimulant, emmenagogue, diuretic. Used in female complaints, obstructions, etc.

Dose of powder, 1 to 2 drachms; of fluid extract, 1 to 2 fl.drachms.

**SENEGA**—(Seneka, 1870).—The root of *Polygala Senega*. Stimulant, expectorant. Acting especially on the bronchial mucous membrane. Used in bronchitis, pneumonia and pulmonary diseases.

Dose of powder, 5 to 15 grains; of abstract, 3 to 10 grains; of decoction (1870), 1 to 2 fl.ounces; of fluid extract, 5 to 15 minims; of infusion (1:16),  $\frac{1}{2}$  to 2 fl.ounces; of syrup, 1 to 2 fl.drachms; of syrup compound (hive syrup), 10 to 60 minims.

**SENNA**.—The leaves of *Cassia acutifolia* (Alexandria Senna). *Cassia elongata* (East India Senna), and other species. Senna is laxative or cathartic, according to the dose, and is used as a mild physic for constipation, or a quick anti-bilious purgative.

Dose of powder, 30 to 120 grains; of confection, 60 to 120 grains; of fluid extract, 1 to 4 fl.drachms; of aqueous fluid extract, 1 to 4 fl.drachms; of purified or alcoholized fluid extract, 1 to 4 fl.drachms; of infusion (1870), 1 to 5 fl.ounces; of compound infusion (black draught), 1 to 2½ fl.ounces; of syrup, 1 to 4 fl.drachms.

**SERPENTARIA**—Virginia Snakeroot.—The rhizome and rootlets of *Aristolochia Serpentaria*. Aromatic, stimulant, diaphoretic. Used in fevers, typhoid conditions, etc.

Dose of powder, 30 to 60 grains; of fluid extract, 30 to 60 minims; of infusion (1870),  $\frac{1}{2}$  to 1½ fl.ounces; of tincture,  $\frac{1}{2}$  to 2 fl.drachms.

**SESAMUM INDICUM**—Benne.—The leaves are demulcent, and are employed for cholera infantum, and other intestinal troubles.

Dose of powder, 30 to 60 grains; of fluid extract, 30 to 60 minims.

**Oil of Benne** is a bland fixed oil, similar to Oil of Almonds, expressed from the seeds of *Sesamum Indicum*. It is used for the same purposes as almond or olive oil, also for hair oil.

**SEVUM**—Suet, Mutton Tallow.—The purified internal fat of the abdomen of *Ovis Aries*. It is used as a covering for irritated surfaces, and as a base for ointments and cerates.

**SILPHIUM**—Rosinweed.—The leaves or root of *Silphium gummiferum*. Tonic, diuretic, diaphoretic, alterative. Used in scrofulous and urinary diseases.

Dose of powder, 30 to 60 grains; of fluid extract, 30 to 60 minims.

**SIMABA CEDRON**—Cedron Seed.—Tonic, antiperiodic. Uses similar to quinine, but produces no bad after effects.

Dose of powder, 2 to 10 grains; of fluid extract, 2 to 10 minims.

**SIMARUBA**.—The bark of the root of *Simaruba officinalis* and other species of *Simaruba*. Bitter tonic. Much used in dysentery, dyspepsia, and other diseases which require a tonic for the mucus membrane.

Dose of powder, 20 to 60 grains; of fluid extract, 20 to 60 minims.

**SINAPIS ALBA**—White Mustard.—The seeds. Used chiefly as a condiment, also used as a preservative for cider. The best ground mustard for table use is made from a mixture of the white and black seeds; but the black mustard is mostly employed for medicinal use.

**Oil of Mustard** is made by expression from the seeds; is bland, nearly odorless, and is much used for adulterating other fixed oils, and for hair oil.

**SINAPIS NIGRA** — **Black Mustard.**—The seeds. The powdered seeds are stimulant in small doses, emetic in large doses mixed with water. The powder is also used for making poultices and plasters, and paper for counter-irritation, and is used in hot water, for baths, etc.

**Volatile Oil of Mustard.** This oil is obtained by macerating the seeds (after the fixed oil has been expressed) with water, and distilling. It is very acrid, and is used either diluted or in combination, as rubefacient, counter-irritant and stimulant.

**SODIUM.**—(Na; 23). *Natrium.* A metallic element, forming the base of the sodium salts. It is obtained by igniting together dry carbonate of sodium, coal, and chalk. The metal has such an affinity for oxygen that it must be kept in oil. It resembles potassium.

**SODA** — **Caustic Soda, Sodium Hydrate.**—Made by evaporating solution of soda. It is an energetic, alkaline caustic, seldom used internally but used externally as an application to warts and abnormal growths. It is chiefly used for making soap and the other soda salts.

**SODII ACETAS** — **Acetate of Sodium.**—Diuretic, antacid. Uses similar to acetate of potassium.

Dose,  $\frac{1}{2}$  to 2 drachms, in solution.

**SODII—ARSENIAS** — **Arseniate of Sodium.**—The solution is used as an alterative in skin diseases, etc.

Dose of solution, 3 to 6 minims.

**SODII BENZOAS** — **Benzoate of Sodium.**—Antiseptic. Used in kidney diseases, etc.

Dose, 15 to 90 grains.

**SODII BICARBONAS** — **Bicarbonate of Sodium.** — Antacid. Used in dyspepsia, acid diarrhoea, heartburn, etc.

Dose, 10 to 30 grains; of troches, 1 to 3.

**SODII BICARBONAS VENALIS** — “**Baking Soda.**” — Commercial Bicarbonate of Sodium. Used for culinary purposes and generally for all purposes, except when a pure Bicarbonate of Sodium is required.

**SODII BISULPHUS** — **Bisulphite of Sodium.**—Antiseptic. Used wherever sulphurous acid is indicated.

Dose, 10 to 30 grains.

**SODII BORAS** — **Borate of Sodium, Borax.**—Antacid, antiseptic. It is used in uric acid deposits or calculi, and in solution as a wash or gargle for sore mouth, sore throat, etc.

Dose of powder, 15 to 30 grains.

**SODII BROMIDUM** — **Bromide of Sodium.**—Sedative, nerve, antispasmodic. Similar to bromide of potassium, but is less liable to produce derangement of the stomach.

Dose, 15 to 120 grains.

**SODII CARBONAS** — **Carbonate of Sodium, “Sal Soda.”**—The commercial “Sal Soda” is used for washing, and is frequently called for by the name of “Washing Soda.” It is also used for preparing other salts of sodium.

**Sodii Carbonas Exsiccatus.**—*Dried Carbonate of Sodium.* Made by heating carbonate of sodium until it loses its water of crystallization. Antacid.

Dose 5 to 15 grains, in solution.

**SODII CITRAS**—Citrate of Sodium.—In doses of from 1 to 2 ounces, in solution; it is a saline purgative.

**SODII CHLORAS**—Chlorate of Sodium.—Is used for the same purposes as chlorate of potassium, but is 16 times more soluble.

Dose, 5 to 15 grains.

**SODII CHLORIDUM**—Sodium Chloride, Common Salt.—A familiar seasoning for food. It is but little used medicinally except for baths and local application.

**SODII ET POTASSII TARTRAS**—Tartrate of Sodium and Potassium, Rochelle Salt.—A saline laxative or purgative, according to the dose. It is much used as a refrigerant laxative, in fevers and inflammatory diseases.

Dose, from  $\frac{1}{4}$  to 1 ounce, in solution.

**SODII HYPOPHOSPHIS**—Hypophosphite of Sodium.—A nutritive tonic. Used in pulmonary and wasting diseases; generally in combination.

Dose, 5 to 20 grains.

**SODII HYPOSULPHIS**—Hyposulphite of Sodium.—A powerful antiseptic. Used in septic and suppurative diseases and blood poisoning, also externally as a wash.

Dose, 10 to 20 grains.

This salt is also much used by photographers.

**SODII IODIDUM**—Iodide of Sodium.—Alterative, absorbent, the same as Iodide of Potassium.

Dose, 5 to 30 grains.

**SODII NITRAS**—Nitrate of Sodium.—Mild laxative. Sometimes used in dysentery, and in solution for diphtheria, etc.

Dose, 1 to 2 drachms.

**SODII PHOSPHAS**—Phosphate of Sodium.—Used in bowel troubles, also as an antacid and nerveine.

Dose, from 5 grains to 4 drachms, or more.

**SODII PYROPHOSPHAS**—Pyrophosphate of Sodium.—Seldom employed medicinally, but used for making pyrophosphate of iron, etc.

**SODII SALICYLAS**—Salicylate of Sodium.—Made by neutralizing Salicylic Acid with Carbonate of Sodium, in solution, and then evaporating the solution. Used for the same purposes, medicinally, as Salicylic Acid.

Dose, 5 to 30 grains.

**SODII SULPHAS**—Sulphate of Sodium, Glauber's Salt.—Saline purgative. Used for liver troubles, etc., and as a physic for horses.

Dose of the salt,  $\frac{1}{2}$  to 1 ounce for adult; for horses,  $\frac{1}{4}$  to  $\frac{1}{2}$  pound av.

**SODII SULPHIS**—Sulphite of Sodium.—Strong antiseptic. Uses similar to the hyposulphite.

Dose, 15 to 60 grains.

**SODII SULPHOCARBOLATE**—Sulphocarbolate of Sodium.—Uses similar to Carbolic Acid, but less irritating.

Dose, 10 to 30 grains.

**SODII TARTRAS**—Tartrate of Sodium, Soda Powders.—Made by putting up Bicarbonate of Sodium, 30 grains in a blue paper;

Tartaric Acid, 25 grains in a white paper; dissolving them separately; mixing and drinking during effervescence.

**SOLIDAGO**—Golden Rod.—The leaves and flowering top of *Solidago odora*. Stimulant, carminative. Generally used in infusion, as a warm drink.

Dose of fluid extract, 30 to 60 minims; of infusion (1:10), 2 to 4 fl. ounces.

**SOLUTIONES**—Solutions, Liquors.—Substances, (usually chemicals,) dissolved in some aqueous menstruum. (See liquors, page 233.)

**SPECIES**—Teas.—In medicine mixtures of cut herbs, etc. Used for making infusions or “teas.”

**SPIRÆA TOMENTOSA**—Hardhack.—The herb. Tonic, astringent. Used in cholera infantum, diarrhœa, etc.

Dose of powder, 20 to 60 grains; of fluid extract, 20 to 60 minims.

**SPIGELIA**—Pink Root.—The rhizome and rootlets of *Spigelia Marilandica*. Anthelmintic, narcotic. A popular remedy, when combined with Senna (“Pink and Senna”), for worms.

Dose of powder, 30 to 60 grains; of fluid extract, 30 to 60 minims; of fluid extract with Senna, 1 to 2 fl.drachms; of infusion (1870),  $\frac{1}{2}$  to 4 fl.ounces; of compound infusion, Pink and Senna, 1 to 4 fl.ounces.

**SPIRITUS**—Spirits.—A general name for a variety of preparations, among which are included spirituous liquors, essences or solutions of essential oils in spirit, distilled spirits from various drugs, etc. (See page 272.)

**SPONGIA**—Sponge.—Sponges are used mainly for bathing and washing, and are of various grades and quality.

**Sponge Tents** are prepared by dipping pieces of sponge of the proper shape into melted beeswax, and rolling between hot iron plates. They are used for enlarging orifices and passages.

**Burnt Sponge** is prepared by burning sponge in a covered crucible. It is used for goitre and glandular enlargements.

**STANNUM**—Tin.—(Sn; 117.7.) A familiar metal, largely used in manufacturing and the arts, and but little used in medicine.

**Chloride of Tin** is a white moist crystalline salt, chiefly used for dyeing.

**Solution of Chloride of Tin**—*Muriate of Tin*, *Cochineal Compound*, *Madder Compound*, etc., is used mainly as a mordant for dyeing.

**STATICE**—Marsh Rosemary.—The root of *Statice Caroliniana*. Astringent, demulcent. Used in diarrhœa and dysentery, and as an astringent, wash, injection or gargle.

Dose of powder, 10 to 40 grains; of fluid extract, 10 to 40 minims.

**STEARINUM**—Stearin.—The solid portion of tallow and fats, obtained by removing the olein. It is sometimes used in place of wax for hardening ointments, also in starch, for laundry use.

**STERCULIA ACUMINATA**—Cola or Kola Nuts.—Properties similar to coffee, tea and coca. Nerve tonic and stimulant. It is also becoming popular as a cure for dyspomania and the opium habit. The nut may be chewed or administered in the form of a fluid extract.

Dose of fluid extract,  $\frac{1}{2}$  to 1 fl.drachm.

**STIGMATA MAIDIS**—Corn Silk.—(See *Maidis Stigmata*, page 452)



**STILLINGIA**—Queen's Root.—The root of *Stillingia sylvatica*. Alterative and stimulant of the glandular system. It is used in all blood and skin diseases, scrofula, liver derangements, etc.

Dose of powder, 15 to 60 grains; of fluid extract, 20 to 60 minims; of compound fluid extract, 30 to 90 minims; of compound syrup, 1 to 4 fl.drachms.

**STRAMONIUM**.—The leaves and seeds of *Datura Stramonium*. Anodyne, narcotic, antispasmodic, hypnotic. Used in spasmodic diseases, neuralgia, asthma, etc. The powdered leaves are burned and the smoke inhaled for asthma.

Dose of powdered leaves, 1 to 5 grains; of extract of leaves,  $\frac{1}{2}$  to 1 grain; of fluid extract of leaves, 1 to 5 minims. Dose of powdered seeds, 1 to 3 grains; of extract of seeds,  $\frac{1}{4}$  to  $\frac{1}{2}$  grain; of fluid extract of seeds, 1 to 3 minims; of tincture of seeds, 5 to 30 minims. Stramonium ointment is officinal and is considerably used as an anodyne ointment.

**STRONTIUM**.—(Sr; 87.4). An alkaline, metallic element, not used as a medicine. Its salts are employed in pyrotechnics for making red fire, red light, etc. The Nitrate of Strontium is the salt chiefly used.

**STRYCHNINA**—Strychnine (1880), *Strychnia* (1870).—An alkaloid prepared from nux vomica or ignatia. Poison, bitter, nerve tonic. It is used as a general nerve tonic, and for paralysis, constipation, etc.

Dose,  $\frac{1}{100}$  to  $\frac{1}{20}$  grain.

**Oleate of Strychnine** is usually made containing 2 per cent. of Strychnine. It is used externally for paralysis, etc.

**STRYCHNIÆ ACETAS**—Acetate of Strychnine.—The Acetate was formerly much employed because of its solubility, but the sulphate is now more generally used.

Dose from  $\frac{1}{80}$  to  $\frac{1}{16}$  grain.

**STRYCHNINÆ SULPHAS**—Sulphate of Strychnine.—The most used and most reliable soluble salt of strychnine.

Dose from  $\frac{1}{80}$  to  $\frac{1}{16}$  grain.

**STYRAX**—Storax—Liquid Storax.—The balsam obtained from *Liquidambar orientalis*. Stimulant, expectorant. Seldom used except as an ingredient in compound tincture of benzoin and other compound tinctures.

Dose, 10 to 15 grains.

**SUCCI**—Juices.—The juices expressed from fresh leaves or plants and preserved by the addition of alcohol. They are now but little used.

**SUCCINUM**—Amber.—A resinous fossil substance supposed to be from the extinct tree *Pinites succinefer*. The substance is only used for making fancy articles and in medicine as a source of *oil of amber* by distillation.

**Oil of Amber** is given for nervous diseases, hysteria, epilepsy, convulsions, etc., and used externally in liniments.

**SULPHUR**—Brimstone.—(S; 32). Most of the Sulphur of commerce is obtained by roasting iron pyrites, copper pyrites or sulphur earths. When purified it is called *brimstone* or *Roll Sulphur*. When this is sublimed it is called *Sublimed Sulphur* or *Flowers of Sulphur*.

*Sulphur Vivum* is the impure residue left in the pots after the brimstone is run off, when manufacturing roll brimstone.

**SULPHUR LOTUM**—Washed Sulphur.—Prepared by washing sublimed sulphur with water containing a little water of ammonia, and then drying. This is now directed to be used in medicinal preparations,

instead of Sublimed Sulphur as heretofore. It is a "blood purifier," mildly laxative, and is given with cream tartar for eruptions, piles, etc. Externally it is employed in ointment for itch and skin diseases.

**SULPHUR PRÆCIPITATUM**—Precipitated Sulphur, Lac Sulphur.—Uses similar to washed sulphur. It is also employed in combination with sugar of lead, etc., as a "wonderful hair restorative."

**SULPHURIS IODIDUM**—Iodide of Sulphur.—Used externally for skin diseases, usually in the form of ointment.

**SUMBUL**—Musk Root.—The root of *Ferula Sumbul*. Stimulant and nervine. Used in hysteria and other nervous disorders, and for diseased mucous discharges; also used in perfumery.

Dose of powder, 10 to 60 grains; of fluid extract, 10 to 60 minims; of tincture,  $\frac{1}{2}$  to 2 fl.drachms.

**SUPPOSITORIA**—Suppositories.—Preparations in conical, cylindrical or ovoid form, composed of Cacao Butter, or some other substance of low melting point, with which medicines are incorporated. Suppositories are introduced into various cavities or passages of the body, either as a local or general means of medication. (See page 281.)

**SYMPHYTUM**—Comfrey.—The root of *Symphytum officinale*. Demulcent. Used in inflammation of the mucous membrane, diarrhœa, pulmonary affections and diseased mucous discharges.

Dose of powder, 1 to 2 drachms, in the form of decoction; of fluid extract,  $\frac{1}{2}$  to 2 fl.drachms.

**SYRUPI**—Syrups.—Nearly saturated solutions of sugar, either plain, or combined with various medicinal substances. (See page 283.)

The properties, uses and doses of nearly all the syrups are mentioned under the name of the drug or drugs from which they are prepared.

**Syrup of Hypophosphites.** Several preparations by this or similar names are used—mainly in pulmonary and wasting diseases. The dose is generally from 1 to 2 fl.drachms.

**Syrup of Phosphates.**—Several preparations of soluble phosphates are used as tonic, and oxygenizing preparations. The usual dose is from 1 to 2 fl.drachms.

**TABACAM**—Tobacco.—The leaves of *Nicotana Tabacum*. Seldom employed internally as a medicine. Occasionally used as an emetic. Ointment of tobacco is used in parasitical skin diseases. The infusion is used for destroying insects and lice on plants.

**TAMARINDUS**—Tamarind.—The pulp of the fruit. It is employed as an acid laxative, and considerably used in "Tropical Fruit Lozenges," etc.

Dose as a laxative, 2 to 4 ounces.

**TANACETUM**—Tansy.—The leaves and flowering tops of *Tanacetum vulgare*. Emmenagogue, bitter tonic. It is used for bitters, and female irregularities. The oil is sometimes used as an abortive.

Dose of powder, 15 to 75 grains; of fluid extract, 15 to 60 minims; of infusion (1:16), 1 to 2 fl.ounces; of oil, 2 to 5 minims.

**TARAXACUM**—Dandelion.—The root of *Taraxacum Dens-leonis*, gathered in autumn. Bitter tonic, laxative. Acts on the liver, stomach and bowels.

Dose of powder, 30 to 120 grains; of decoction (1:16),  $1\frac{1}{2}$  to 3 fl.ounces; of extract, 15 to 60 grains; of fluid extract, 1 to 2 fl.drachms; of fluid extract compound, 1 to 2 fl.drachms; of fluid extract with rhu-



barb, 60 to 90 minims; of fluid extract with senna, 60 to 90 minims; of infusion (1870), 1 to 2 fl.ounces.

**TECOMA RADICANS**—Trumpet Creeper.—The bark. Tonic, stomachic. Aids digestion. Used in stomach troubles.

Dose of powder, 20 to 60 grains; of fluid extract, 20 to 60 minims.

**TEREBINTHINA**—Turpentine, Gum Thus.—The oleo-resin of various species of *Pinus*. More commonly known as White Pine Gum or White Pine Turpentine. (See *Pinus Strobus*.) It is used as a stimulant in ointment and plasters.

**TEREBINTHINA CANADENSIS**—Canada Turpentine, Balsam of Fir.—(See *Abies Balsemea*, page 401).

**TEREBINTHINÆ OLEUM**—Oil of Turpentine, Spirit of Turpentine.—The volatile oil distilled from turpentine. Stimulant, diuretic, anthelmintic. Used as a stimulant to the mucous membrane in low typhoid conditions. Externally, as a counter-irritant, and in liniments, etc.

Dose as a stimulant, 3 to 10 minims, best given in emulsion; for worms, 10 to 30 minims, with cathartics.

**THEA**—Tea.—The leaves of *Camellia Thea*, from which is made the favorite domestic drink. Astringent, mildly stimulating. Used in medicine to sustain the nervous forces.

Dose of powder, 1 to 2 drachms; of fluid extract, 1 to 2 fl.drachms; of infusion (1:16), 2 to 4 fl.ounces.

**THEOBROMA**—Cacao.—The seeds of *Theobroma Cacao*. Nutritive and stimulant.

**Chocolate** is prepared from the seeds by roasting them, removing the shells and grinding them by the aid of heat into a smooth paste, which is then cast into moulds.

**Oil of Theobroma**.—*Cacao Butter* is used for making suppositories, and in ointments.

**THUJA**—Arbor Vitæ.—The fresh twigs and tops of *Thuja occidentalis*. Stimulant. Used in fevers, rheumatism, catarrhal conditions, etc.

Dose of powder, 30 to 60 grains; of fluid extract, 30 to 60 minims; of green plant fluid extract, 20 to 40 minims.

**THYMUS**—Thyme.—The leaves of *Thymus vulgaris*. Stimulant, tonic, antispasmodic, emmenagogue.

Dose of powder, 20 to 60 grains; of fluid extract, 20 to 60 minims; of infusion (1:16), 1 to 2 fl.ounces.

**Oil of Thyme**.—(See Oil of *Origanum*.) Used mainly combined with other oils, etc., for liniments.

**Thymol**.—The crystallizable portion of Oil of Thyme. A powerful antiseptic. Used mainly in the form of ointment or solution for foul ulcers and sores.

**TIGLII OLEUM**—Croton Oil.—The oil obtained by distillation from *Croton Tiglium*. A powerful cathartic and irritant. Used externally for counter-irritation and to produce pustular effusion.

Dose,  $\frac{1}{4}$  to 2 minims, diluted, and with great caution.

**TILIA**—Linden Flowers.—The flowers, with the leafy attachment, of *Tilia vulgaris*, and other species of *Tilia*. Used, in the form of infusion, as a diaphoretic and nervine, and to assist digestion.

Dose of powder, 30 to 75 grains, in half a pint of hot water; of fluid extract, 30 to 75 minims.

**TINCTURÆ—Tinctures.**—Preparations of a varying standard of strength, in which the soluble properties of drugs are held in solution generally, by an alcoholic, or hydro-alcoholic menstruum. When tinctures are made from fluid extracts, fluid measure of the fluid extract equivalent to the weight of the drug or drugs directed should be used. (See page 310.)

**TOLUTANUM BALSAMUM—Balsam of Tolu.**—The balsam-resin from *Myroxylon toluifera*. It is used mainly in the form of syrup as a pleasant excipient for cough medicines. The tincture is used for making an insoluble coating for pills, and as a flavoring ingredient for mixtures, etc.

Dose of syrup, 1 to 4 fl.drachms; of tincture, 10 to 30 minims.

**TONGA.**—A mixture of thin fibrous barks from the Fiji Islands. It is claimed that this drug is a wonderful cure for neuralgia.

Dose of fluid extract, 15 to 30 minims.

**TORMENTILLA—Tormentil.**—(See *Potentilla Tormentilla*).

**TRAGACANTHA—Tragacanth.**—An exudation from incisions made in the stem of *Astragalus gummifer*, and other species. Used chiefly for making a pasty mucilage, and as an excipient for pills, troches, etc., also for making Bandolin.

**TRIFOLIUM PARTENSE—Red Clover.**—The flower heads. Anodyne, sedative, alterative. Used in combination with other alteratives for cleansing the blood, and in spasmodic cough, etc. Externally it is used as a cleansing wash for ulcers and sores.

Dose of fluid extract, 1 to 2 fl.drachms; of infusion (1:10), 1 to 3 fl. ounces.

**TRILLIUM—Beth Root, Birth Root.**—The rhizome of *Trillium erectum*. Astringent, antiseptic, tonic. Used in diseased mucous discharges of the genito-urinary organs, and in catarrh, bronchitis, etc.

Dose of powder, 30 to 60 grains; of fluid extract, 30 to 60 minims.

**TRIOSTEUM PERFOLIATUM—Fever Wort.**—The plant or root. Mild cathartic and antiphlogistic. Used in febrile conditions.

Dose of powder, 30 to 60 grains; of fluid extract, 30 to 60 minims.

**TRITICUM REPENS—Couch-grass, Dog-grass.**—The under ground stems or stolons. Diuretic, antiphlogistic, and emollient. Used in inflammation or irritation of the bladder, and genito-urinary organs.

Dose of decoction (1:10), 2 to 4 ounces; of fluid extract, 1 to 2 fl.drachms.

**TRITURATIONES—Triturations.**—Preparations in the form of powder, in which one part of an active medicinal agent is diluted with nine parts of sugar of milk. (See page 369.)

**TROCHISCI—Troches.**—Medicines made up in the form of lozenges, which are designed to dissolve slowly and thus give a local effect of the medicinal agents. (See page 370.)

**TURNERA APHRODISIACA—Damiana.**—(See page 430.)

**TUSSILAGO—Coltsfoot.**—The leaves of *Tussilago farfara*. Demulcent, expectorant. Used in pulmonary diseases, coughs, etc., and externally in poultices, for sores and ulcers.

Dose of powder, 30 to 90 grains, in decoction; of fluid extract, 30 to 90 minims.

**ULMUS—Elm, Slippery Elm.**—The inner bark of *Ulmus fulva*.

Demulcent, emollient. Used in the form of a drink for coughs, internal fever and inflammation and externally in the form of a poultice for swellings, sores, ulcers and irritated surfaces.

Dose of decoction or mucilage, *ad libitum*; of fluid extract, 2 to 4 fl. drachms.

**UMBELLULARIA**—California Laurel.—The leaves of *Oreodanphne californica*. Stimulant, tonic, nervine. Used for headache, fevers, bilious colic, diarrhoea, etc.

Dose of powder, 10 to 30 grains; of fluid extract, 10 to 30 minims.

**UNGUENTA**—Ointments, Salves.—Preparations made with lard or some other soft unctuous fat as a basis and medicated with various medicinal substances, that are desired to be absorbed locally. (See page 376)

**URECHITES SUBERECTA**.—The leaves. Properties similar to aconite. Sedative, narcotic, controlling the action of the heart.

Dose of fluid extract, 2 to 5 minims; of infusion (1:10), 20 to 60 minims.

**URTICA DIOICA**—Nettle.—The root. Astringent, stimulant. Used in uterine hemorrhage, gravel, dropsy, jaundice, etc.

Dose of powder, 30 to 60 grains; of fluid extract, 30 to 60 minims.

**USTILAGO**—Cornsmut, Corn Egot.—The fungus growth *Ustilago maydis*, found on corn. It is used for the same purposes as Ergot, for bringing on uterine contraction, checking hemorrhage, etc.

Dose of powder, 15 to 60 grains; of fluid extract, 15 to 60 minims.

**UVA URSI**—Bearberry.—The leaves of *Arctostaphylos Uva Ursi*. Astringent, tonic. Used in kidney and urinary diseases, inflammation, incontinence of urine, etc.

Dose of powder, 30 to 75 grains; of decoction (1870),  $\frac{1}{2}$  to 2 fl. ounces; of fluid extract, 30 to 75 minims.

**UVULARIA PERFOLIATA**—Bellwort.—The root. Demulcent, tonic, nervine. Used in sore throat, sore mouth, and internal inflammation, and externally, in the form of a poultice, for sores and ulcers.

Dose of powder, 30 to 60 grains; of fluid extract, 30 to 60 minims.

**VACCINUM CRASSIFOLIUM**—Creeping Huckleberry. The plant. Astringent, antiscorbutic. In diarrhoea and ulcerated condition of the stomach or bowels.

Dose of powder, 20 to 60 grains; of fluid extract, 20 to 60 minims.

**VALERIANA**—Valerian.—The root of *Valeriana officinalis*. Antispasmodic, nervine. Used for headache, nervousness, sleeplessness, etc.

Dose of powder, 30 to 75 grains; of abstract, 15 to 40 grains; of extract, 10 to 30 grains; of fluid extract,  $\frac{1}{2}$  to 2 fl. drachms; of infusion (1:16), 1 to 2 ounces; of tincture, 1 to 3 fl. drachms; of tincture ammoniated, 1 to 3 fl. drachms; of oil, 1 to 2 minims.

**VANILLA**—Vanilla Beans.—The fruit of *Vanilla planifolia*. Used only for flavoring and in perfumery.

Vanillin is the crystallizable odorous principle of Vanilla.

**VERATRINA**—Veratrine, 1880, *Veratria* (1870).—An alkaloid prepared from the seeds of *Asagrea officinalis*. A powerful arterial depressant and sedative. It is used internally for neuralgia, rheumatism, etc., but mainly externally in the form of oleate or ointment, as an application for neuralgia, sciatica, etc.

Dose,  $\frac{1}{20}$  to  $\frac{1}{12}$  grain.

**VERATRUM ALBUM**—White Hellebore.—The root. But little used internally. It is employed externally in the form of decoction and ointment for lice and vermin, and in powder is much used for currant worms, cabbage worms, and insects.

It is also used as an ingredient in catarrh snuff.

**VERATRUM VIRIDE**—American Hellebore.—The rhizome and rootlets. Powerful sedative. Used to control arterial excitement in fevers, brain and heart troubles, and as an antispasmodic in convulsions.

Dose of powder, 2 to 5 grains; of fluid extract, 2 to 5 minims; of green plant fluid extract, 1 to 3 minims; of tincture, 3 to 10 minims.

**VERBASCUM**—Mullein.—The flowers or leaves of *Verbascum Thapsus*. Demulcent. Used chiefly for coughs, colds, etc., and as an ingredient of pectoral teas.

Dose of fluid extract, 1 to 4 fl.drachms; of infusion (1:10), 2 to 6 fl.ounces.

**VERBENA HASTATA**—Vervain.—The herb or root. Tonic, expectorant, diaphoretic. Used in fevers, influenza, scrofulous diseases, etc.

Dose of powder, 30 to 60 grains; of fluid extract, 30 to 60 minims.

**VETTIVERIA**—Vetivert, Cus-Cus.—The root of *Andropogon murieticus*. Used only in perfumery.

**VIBURNUM DENTATUM**—Arrow Wood.—The bark. Used for cancer, both externally in the form of plaster, and internally in the form of fluid extract or infusion.

Dose of fluid extract, 30 to 60 minims; of infusion (1:10), 1 to 2 fl.ounces.

**VIBURNUM OPULUS**—Cramp Bark, High Cranberry Bark.—The bark. It is antispasmodic, nervine and astringent, and uterine tonic. It is used for relaxing cramps and spasms, especially those peculiar to female complaints.

Dose of powder, 1 to 2 drachms; of fluid extract, 1 to 1½ fl.drachms.

**VIBURNUM PRUNIFOLIUM**—Black Haw.—The bark. Nervine tonic. Used mainly to prevent abortion, also in uterine diseases, as a tonic and nervine.

Dose of powder, 30 to 120 grains; of fluid extract, ½ to 2 fl.drachms.

**VINA**—Wines.—Medicinal wines are preparations in which the active medicinal ingredients are held in solution in a vinous liquid. The properties and doses of medicinal wines are noticed under the names of the drugs with which they are compounded. (See page 394.)

**VINUM**—Wine.—A liquid prepared by the fermentation of the juice of grapes or other fruit, and containing a varying proportion of alcohol or spirit.

**Vinum Album**—White Wine.—This is a general name for any grape wine which is made by fermenting the juice (without the skins and pulp), and which contains from 10 to 12 per cent. of alcohol.

**Vinum Album Fortius**—Stronger White Wine.—This is the base of all the official medicated wines, and is made by adding 1 part of alcohol to 7 parts of white wine.

**Vinum Rubrum**—Red Wine.—A general name for any red wine which is made by fermenting the juice of dark-colored grapes with their skins and pulp.

**VIOLA TRICOLOR**—Wild Pansy.—The flowering plant.

Laxative, emollient. Used in lung and kidney diseases, and externally in the form of poultice for skin diseases, sores, etc.

Dose of powder, 15 to 60 grains; of fluid extract, 15 to 60 minims.

**VISCUM ALBUM** — Mistletoe. — The entire plant. Narcotic, tonic, antispasmodic. Used for the same purposes as Ergot.

Dose of powder, 20 to 60 grains; of fluid extract, 20 to 60 minims.

**WINTERA** — Winter's Bark. — The inner bark of *Drimys Winteri*. Warm stimulant, similar to Canella. Used with cathartics to prevent griping, and for colic, influenza, etc. Employed by Dr. Winter as a remedy for scurvy.

Dose of powder, 30 to 60 grains; of fluid extract, 30 to 60 minims.

**XANTHIUM SPINOSUM** — Spiny Burweed. — The plant. It has been used as a remedy for hydrophobia, and as a stimulant and sedative.

Dose of powder, 15 to 30 grains; of fluid extract, 15 to 30 minims.

**XANTHIUM STRUMARIUM** — Cocklebur. — Astringent, styptic. In diarrhoea, hemorrhage, retention of urine, etc.

Dose of powder, 15 to 30 grains; of fluid extract, 15 to 30 minims.

**XANTHORRIZA APIIFOLIA** — Yellow Root, also spelled *Zanthorrhiza*. Bitter tonic, similar to Columbo. Used in bitters, and as a stomachic and tonic.

Dose of powder, 20 to 40 grains; of fluid extract, 20 to 40 minims.

**XANTHOXYLUM** — Prickly Ash. — The bark or fruit (berries) of *Xanthoxylum fraxineum*. Stimulant, sialagogue, alterative. Used for diseases of the stomach and liver, rheumatism, suppression of menses, etc.

Dose of powdered bark or berries, 5 to 30 grains; of fluid extract of bark or berries, 5 to 30 minims.

**ZEDOARIA** — Zedoary. — The rhizome of *Curcuma Zedoaria*. Properties and uses similar to ginger.

Dose of powder, 15 to 30 grains; of fluid extract, 15 to 30 minims.

**ZINCUM** — Zinc. — (Zn; 64.9.) A familiar metallic element, much used in the arts. Its salts only are used in medicine.

**ZINCI ACETAS** — Acetate of Zinc. — Astringent. Generally used in solution as an injection for gonorrhœa, gleet, etc. Occasionally used as a nervine for epilepsy.

Dose, from  $\frac{1}{2}$  to 2 grains.

**ZINCI BROMIDUM** — Bromide of Zinc. — Nervine and sedative. But little used.

Dose, 1 to 5 grains.

**ZINCI CARBONAS PRÆCIPITATUS** — Precipitated Carbonate of Zinc. — Made by precipitating a solution of Sulphate of Zinc with a solution of Carbonate of Sodium. Used externally in powder or ointment for skin diseases or irritated surfaces, also considerably used as an ingredient in face powders, and cosmetics.

**ZINCI CHLORIDUM** — Chloride of Zinc. — A powerful escharotic. Used to destroy fungus growths, cancer, etc. A solution of Chloride of Zinc is employed as a disinfectant.

**ZINCI IODIDUM** — Iodide of Zinc. — Nervine, tonic, absorbent. Used in the form of ointment for skin diseases and given internally for tumors, etc.

Dose, from 1 to 3 grains.

**ZINCI LACTAS**—Lactate of Zinc.—Used as a nervine and tonic in epilepsy and chorea.

Dose, from  $\frac{1}{4}$  to 1 grain.

**ZINCI OXIDUM**—Oxide of Zinc.—Seldom used internally, but much employed in the form of ointment and oleate for skin diseases and excoriations.

**Oleate of Zinc** is made from the oxide by triturating it with 19 times its weight of Oleic Acid.

**ZINCI PHOSPHIDUM**—Phosphide of Zinc.—Nervine, tonic vitalizer. Used for nervous exhaustion, impotence, loss of vital force, seminal weakness, etc.

Dose, from  $\frac{1}{8}$  to  $\frac{1}{3}$  grain.

**ZINCI SULPHAS**—Sulphate of Zinc.—Astringent, emetic. It is seldom taken except as an emetic, but may be given as a nervine tonic. It is much employed for eye-water and as an injection for gonorrhœa, etc.

Dose as a nervine,  $\frac{1}{2}$  to 1 grain; as an emetic, 20 to 30 grains, in warm water.

**ZINCI SULPHOCARBOLAS**—Sulphocarbolate of Zinc. — Used as a disinfectant wash or ointment for sores, ulcers and cancers.

**ZINCI VALERIANAS**—Valerianate of Zinc.—Nervine. Considerably used in epilepsy, neuralgia, hysteria, etc.

Dose,  $\frac{1}{2}$  to 5 grains.

**ZINGIBER**—Ginger.—The rhizome of *Zingiber officinalis*. Warm stimulant, carminative. Used as a stomachic, and as a warm stimulant in diarrhœa, colic, influenza, colds, etc., also as a seasoning in cooking.

Dose of powder, 10 to 30 grains; of fluid extract, 10 to 30 minims; of infusion (1870), 1 to 2 fl.ounces; of oleo-resin, 1 to 2 minims; of syrup, 1 to 2 fl.drachms; of tincture (1870), 20 to 50 minims; of tincture (1880), 30 to 80 minims; of troches, 1 to 2.



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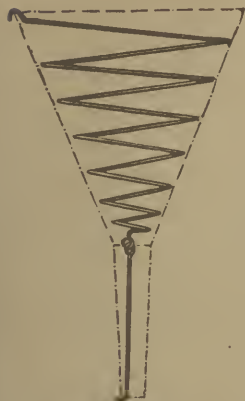






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PATENTED APRIL 24, 1877.



Made to fit funnels of different diameters as follows:

For 4-inch Funnels,	15 cents.
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" 6 "	" 20 "
" 7 "	" 25 "
" 8 "	" 25 "
" 9 "	" 30 "

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## THE UTILITY OIL STOVE.

One Burner, \$2.50. Two Burners, \$4.00.



These are a very convenient and serviceable Oil Stove for Druggists.

They are not large enough to be in the way, but are large enough for all purposes for which Oil Stoves are usually required by Druggists. The small size has one Brass Burner 4 inches wide, and will boil water in five minutes. The large size has two 4-inch Burners. They can also be regulated to a very moderate heat without smoking. They are especially adapted for Fenner's Water-Bath Percolator and Still, or Water-Bath and Still, and will please all who want Oil Stoves.

Address,

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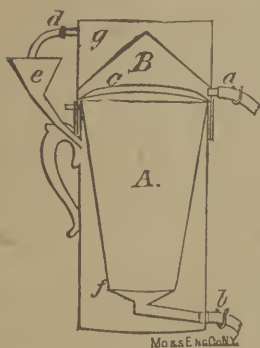
"The most useful and Convenient Apparatus ever offered to Druggists."

## FENNER'S COMBINED

# Water-Bath Percolator and Pharmaceutical Still

Patented February 7, 1882.

A Perfect Percolator, Water-Bath and Still combined. For making Fluid Extracts, Solid Extracts, Tinctures, Syrups, Infusions, etc., and for Evaporating and Distilling.



Sectional view.

a much greater extent than a cold menstruum is in itself sufficient evidence of the value of water-bath percolation. Any soluble principles that drugs contain are rapidly and economically obtained by water-bath percolation.

### Fenner's Water-Bath Percolator

Is adapted to the use of the pharmacist and manufacturer for making all preparations in which it is desirable to obtain the strength of drugs, and also for making syrups, solutions, etc. The drug and menstruum are uniformly heated to any required degree and the heat maintained for any length of time, during the entire process of percolation if necessary.

The quart percolator is large enough for from  $\frac{1}{2}$  to 1 lb. of drug, and is very convenient for tinctures, etc. The  $\frac{1}{2}$  gallon percolator is large enough for from 1 to 2 lbs. of drug, and is the smallest size which is furnished with a still. This size is convenient for making all tinctures and from 1 to 2 lbs. of fluid extracts. The 1 gallon size is large enough for from 2 to 4 lbs. of drug—very convenient size for general use and fluid extracts. The  $2\frac{1}{2}$  gallon size readily takes from 6 to 10 lbs. of drug. The 5 gallon size takes from 15 to 25 lbs. of drug and is large enough for most manufacturers, as this quantity of drug is more conveniently percolated than a larger amount. After the percolation is completed the Still top can be put on and all the alcohol remaining in the drug may be distilled off. From 12 to 15 ounces of alcohol often remain in each pound of the drug which may thus be recovered. The Still may be attached or removed at will, and is used for all purposes for which a Still is ever desired by druggists.

"It opens a new and interesting field of labor and profit to the pharmacist."

"Makes the very best preparations in the simplest way, with great saving of time and alcohol."

"A new apparatus with which any druggist can make Fluid Extracts of superior strength and quality."

### Fenner's Water-Bath Percolator and Still

Consists of a Percolator, A, suspended in a water-bath and connected externally by a stop-cock, through which the percolate is received, and a Still, B, which may be adjusted whenever it is needed.

The vessel surrounding the Percolator is designed for water, which is to be heated when desired, forming a water-bath for the Percolator and its contents. In distilling the vapor rises, is condensed on the cone in B, runs into the gutter c, and flows out at a.

The process of water-bath percolation is designed to supersede all other methods for exhausting the strength of drugs. The well-known fact that a heated menstruum dissolves the medicinal properties of drugs much more rapidly and to



In use as a Still.













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